
McGILL
UNIVERSITY
LIBRARY

McGill University Libraries
3 100 785 373 E

ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY,

MONTREAL.

FOUNDED UNDER BEQUEST OF THE HON. JAMES McGILL,
ERECTED INTO A UNIVERSITY BY ROYAL CHARTER
IN 1821, AND RE-ORGANIZED BY AN
AMENDED CHARTER IN 1852.

SESSION 1895-96.

Montreal:

PRINTED FOR THE UNIVERSITY BY JOHN LOVELL & SON.

1895

L53
M2
1895-96
35923

ADDENDA ET CORRIGENDA.

In the Faculty of Arts :—

Rev. Dr. Cornish has resigned the Professorship of Classics.

Dr. P. J. Darey has resigned the Professorship of French Language and Literature.

William Peterson, M.A. (Oxon), LL.D. (St. Andrews), has been appointed Professor of Classics.

Maxime Ingres, B.A. (France), has been appointed Instructor in French Language and Literature.

Dr. Colby, Lecturer in History, has been appointed Professor of History.

In the Donalda Department, one Mathematical scholarship (value $125 a year) will be offered for competition to students entering the Third Year in September, 1896, and another of the same value in September, 1897. The subjects of examinations will be the same as for men.

In section (§XII) on Fees, the Registration fee for all new graduates is $2.50, not $2.00, as printed by error. (p. 48 10th line from bottom.)

Every candidate for the Matriculation examination in any Faculty, must pay a fee of $5 before admission to the examination. This will be reckoned as part of the regular fees if he pass, but will not be returned in case of failure.

At a meeting of the Corporation in April, 1895, it was agreed to request Members of the University to appear in academic dress at University receptions, conversaziones, etc.

The *List of Graduates* corrected to June, 1895, and the *Examination Papers* (price 75 cents) of the Session 1894-95, are published separately, and may be obtained on application to the Secretary, or through booksellers.

Governing Body of the University.

VISITOR:

HIS EXCELLENCY THE RIGHT HONOURABLE THE EARL OF ABERDEEN, M.A. (Oxon), LL.D., P.C.

GOVERNOR GENERAL OF CANADA, ETC.

GOVERNORS:

[*Being the Members of the Royal Institution for the Advancement of Learning.*]

THE HON. SIR DONALD A. SMITH, K.C.M.G., LL.D. (Hon. Cantab.), President and Chancellor of the University.
JOHN H. R. MOLSON, ESQ.
JOHN MOLSON, ESQ.
SIR JOSEPH HICKSON.
WILLIAM C. McDONALD, ESQ.
HUGH McLENNAN, ESQ.
GEORGE HAGUE, ESQ.
EDWARD B. GREENSHIELDS, ESQ., B.A.
SAMUEL FINLEY, ESQ.
ANDREW FREDERICK GAULT, ESQ.
HON. JOHN SPROTT ARCHIBALD, M.A., D.C.L.
CHARLES J. FLEET, ESQ., B.A., B.C.L.

(The Board of Governors has, under the Royal Charter, the power to frame Statutes, to make Appointments, and to administer the Finances of the University.)

PRINCIPAL.

WILLIAM PETERSON, M.A., LL.D., Vice-Chancellor.

(The Principal has, under the Statutes, the general superintendence of all affairs of the College and University, under such regulations as may be in force.)

FELLOWS:

SIR WILLIAM DAWSON, M.A., LL.D., F.R.S., C.M.G., Governors' Fellow.
ALEXANDER JOHNSON, M.A., LL.D., D.C.L., F.R.S.C., Vice-Principal and Dean of the Faculty of Arts.
HENRY ASPINWALL HOWE, LL.D., Governors' Fellow.
REV. D. H. MACVICAR, D.D, LL.D., Principal of the Presbyterian College, Montreal.
JOHN REDPATH DOUGALL, M.A., Representative Fellow in Arts.
REV. J. CLARK MURRAY, LL.D., F.R.S.C., Elective Fellow, Faculty of Arts.
HENRY T. BOVEY, M.A., D.C.L., LL.D., F.R.S.C., M.Inst.C.E., Dean of the Faculty of Applied Science.
BERNARD J. HARRINGTON, M.A., Ph.D., F.G.S., F.R.S.C., Elective Fellow, Faculty of Applied Science.

35923

REV. E. I. REXFORD, B.A., Governors' Fellow.

REV. CANON HENDERSON, M.A., D.D. (Dublin), Principal of the Montreal Diocesan Theological College.

VERY REV. R. W. NORMAN, M.A., D.C.L., Governors' Fellow.

S. P. ROBINS, M.A., LL.D., Principal of McGill Normal School.

FREDERICK W. KELLEY, B.A., Ph.D. (Cornell), Representative Fellow in Arts.

REV. JAMES BARCLAY, M.A., D.D. (Glasgow), Governors' Fellow.

ROBERT CRAIK, M.D., LL.D.; Dean of the Faculty of Medicine.

REV. WILLIAM M. BARBOUR, D.D. (Yale, U.S.), Principal of the Congregational College of British North America.

N. W. TRENHOLME, M.A., D.C.L., Dean of the Faculty of Law.

T. WESLEY MILLS, M.A. (Toronto), M.D., F.R.S.C., Representative Fellow in Medicine.

DUNCAN McEACHRAN, D.V.S., Dean of the Faculty of Comparative Medicine and Veterinary Science.

MALCOLM C. BAKER, D.V.S., Elective and Representative Fellow in Comparative Medicine and Veterinary Science.

REV. A. T. LOVE, B.A., B.D., Principal of Morrin College, Quebec, Q.

ALEXANDER FALCONER, B.A., B.C.L., Representative Fellow in Law.

CHAS. E. MOYSE, B.A. (London), Elective Fellow, Faculty of Arts.

JOHN COX, M.A. (Cantab.), Elective Fellow, Faculty of Arts.

R. F. RUTTAN, B.A., M.D., Elective Fellow, Faculty of Medicine.

WM. McLENNAN, B.C.L., Representative Fellow in Law.

C. H. McLEOD, Ma.E., F.R.S.C., Representative Fellow in Applied Science.

REV. C. R. FLANDERS, B.A., Principal of Stanstead Wesleyan College, Stanstead, Que.

C. H. GOULD, B.A., Governors' Fellow.

REV. W. I. SHAW, M.A., LL.D., Principal of the Montreal Wesleyan Theological College.

F. G. FINLEY, M.D., M.B. (London), Representative Fellow in Medicine.

FRANK D. ADAMS, M.A.Sc., Ph.D. (Heidelberg), Representative Fellow in Applied Science.

JOHN A. DRESSER, B.A., Principal St. Francis College, Richmond, Q.

(The Governors, Principal and Fellows constitute, under the Charter, the Corporation of the University, which has the power, under the Statutes, to frame regulations touching the Course of Study, Matriculation, Graduation and other Educational matters, and to grant Degrees.)

SECRETARY, REGISTRAR AND BURSAR :—

[*And Secretary of the Royal Institution.*]

OFFICE, EAST WING, McGILL COLLEGE.

Office Hours: 9 TO 5.

JAMES W. BRAKENRIDGE, B.C.L., Acting Secretary, Registrar and Bursar.
Address, McGill College.

SAMUEL R. BURRELL, Clerk,
588 Cadieux Street

Principal and Professors Emeriti.

[*Retaining their Rank and Titles, but retired from active work*].

SIR WM. DAWSON, LL.D., F.R.S., C.M.G.

Emeritus Principal, and Emeritus Professor in the Faculty of Arts.

HENRY ASPINWALL HOWE, LL.D.

Emeritus Professor in the Faculty of Arts.

WM. WRIGHT, M.D.

Emeritus Professor in the Faculty of Medicine.

D. C. McCALLUM, M.D.

Emeritus Professor in the Faculty of Medicine.

Rev. GEORGE CORNISH, M.A., LL.D.

Emeritus Professor in the Faculty of Arts.

PIERRE J. DAREY, M.A., B.C.L., LL.D. (Officier d'Académie).

Emeritus Professor in the Faculty of Arts.

MATTHEW HUTCHINSON, D.C.L.

Emeritus Professor in the Faculty of Law.

Hon. J. EMERY ROBIDOUX, D.C.L.

Emeritus Professor in the Faculty of Law.

Officers of Instruction.

PROFESSORS.

WM. PETERSON, M.A. (Oxon), LL.D. (St. Andrews).
Principal and Professor of Classics.

ALEXANDER JOHNSON, M.A., LL.D. (Dublin); D.C.L., F.R.S.C.
Senior Moderator (Math. and Phys.), and late Classical Scholar Trin. Coll., Dub.
Vice-Principal and Dean of the Faculty of Arts, and Peter Redpath Professor of Pure Mathematics. 5 Prince of Wales Terrace, Sherbrooke Street.

ROBERT CRAIK, M.D., LL.D.
Dean of the Faculty of Medicine, and Professor of Hygiene and Public Health. 1 Prince of Wales Terrace, Sherbrooke Street

N. W. TRENHOLME, Q.C., M.A., D.C.L.
Dean of the Faculty of Law, and Gale Professor of Roman and Public Law. Rosemount, Westmount.

HON. J. S. C. WURTELE, J.Q.B., D.C.L.
Professor of Law of Real Estate. 78 Union Avenue.

GILBERT P. GIRDWOOD, M.D., F.R.S.C.
Professor of Chemistry, Faculty of Medicine. 82 University Street.

REV. J. CLARK MURRAY, LL.D. (Glasgow), F.R.S.C.
Professor of Logic, and John Frothingham Professor of Mental and Moral Philosophy. 340 Wood Av., Westmount.

BERNARD J. HARRINGTON, M.A., Ph.D., F.G.S., F.R.S.C.
David J. Greenshields Professor of Chemistry and Mineralogy, and Lecturer in Assaying. 295 University Street.

THOMAS G. RODDICK, M.D.
Professor of Surgery. 80 Union Avenue.

WILLIAM GARDNER, M.D.
Professor of Gynæcology. 109 Union Avenue.

HENRY T. BOVEY, M.A. (Cantab.), M. Inst. C.E., LL. D., D.C.L. (Bishops), F.R.S.C., late Fellow Queen's College, Cambridge.
Dean of the Faculty of Applied Science, and William Scott Professor of Civil Engineering and Applied Mechanics. Sunnandene, Ontario Avenue.

CHARLES E. MOYSE, B.A. (London).
Molson Professor of English Language and Literature. 802 Sherbrooke Street.

C. H. McLEOD, Ma.E., F.R.S.C.
Professor of Surveying and Geodesy, and Lecturer on Descriptive Geometry, Supt. of Meteorological Observatory. Observatory, McGill College.

LEONIDAS HEBER DAVIDSON, Q.C., M.A., D.C.L.
Professor of Commercial Law. 30 St Mark Street.

FRANCIS J. SHEPHERD, M.D.
Professor of Anatomy. 152 Mansfield Street.

FRANK BULLER, M.D.
Professor of Ophthalmology and Otology. 123 Stanley Street.

JAMES STEWART, M.D.
Professor of Medicine and Clinical Medicine. 285 Mountain Street.

GEORGE WILKINS, M.D.
Professor of Medical Jurisprudence and Lecturer in Histology. 898 Dorchester St.

D. P. PENHALLOW, B.Sc. (Boston Univ.), F.R.S.C., F.R.M.S.
Professor of Botany. 215 Milton Street.

G. H. CHANDLER, M.A.
Professor of Practical Mathematics in Faculty of Applied Science. 32 Lorne Avenue.

T. WESLEY MILLS, M.A., M.D., F.R.S.C.
Professor of Physiology. McGill College.

J. CHALMERS CAMERON, M.D.
Professor of Midwifery and Diseases of Infancy. 941 Dorchester Street.

REV. DANIEL COUSSIRAT, B.A., B.D. (Université de France), D.D. (Queen's), Officier d'Académie,
Professor of Hebrew and Oriental Literature. 171 Hutchison Street.

A. JUDSON EATON, M.A., Ph.D. (Leipsic).
Associate Professor of Classics. 21 Durocher Street.

ARCHIBALD McGOUN, M.A., B.C.L.
Professor of Legal Bibliography, and Secretary of Faculty of Law. 181 St. James Street.

DUNCAN McEACHRAN, F.R.C.V.S., D.V.S.
Dean of the Faculty of Comparative Medicine and Veterinary Science, and Professor of Veterinary Medicine and Surgery. 6 Union Avenue.

MALCOLM C. BAKER, D.V.S.
Professor of Veterinary Anatomy. 6 Union Avenue.

CHARLES McEACHRAN, D.V.S.
Professor of Veterinary Obstetrics and Diseases of Cattle. 6 Union Avenue.

JOHN COX, M.A. (Cantab.), late Fellow Trin. Coll., Cambridge.
William C. McDonald Professor of Physics. 28 Hutchison Street.

CHARLES A. CARUS-WILSON, M.A. (Cantab.), Assoc. M. Inst. C.E., M.Inst. E.E.
William C. McDonald Professor of Electrical Engineering. 66 McTavish Street.

CHRISTOPHER A. GEOFFRION, Q.C., D.C.L.
Professor of Law of Contracts. 97 St. James Street.

THOMAS FORTIN, LL.L. (Laval), B.C.L.
Professor of Civil Procedure and Municipal Law. 97 St. James Street.

W. DeM. MARLER, B.A., B.C.L.
Professor of Notarial Law. 157 St. James Street.

HON. CHARLES J. DOHERTY, D.C.L.
Professor of Civil Law. 282 Stanley Street.

HARRY ABBOTT, Q.C., B.C.L.
Professor of Commercial Law. 11 Hospital Street.

EUGENE LAFLEUR, B.A., B.C.L.
Professor of Civil Law. N.Y. Life Building, Place d'Armes.

ALEX. D. BLACKADER, B.A., M.D.
Professor of Pharmacology and Therapeutics, and Lecturer on Diseases of Children. 236 Mountain Street.

JOHN T. NICOLSON, B.Sc. (Edin.).
Thomas Workman Professor of Mechanical Engineering, Lecturer on Thermodynamics. 260 University Street.

R. F. RUTTAN, B.A., M.D.
Professor of Practical Chemistry, and Registrar Medical Faculty. McGill College.

JAMES BELL, M.D.
Professor Clinical Surgery. 873 Dorchester Street.

J. GEORGE ADAMI, M.A., M.D. (Cantab.), F.R.C.S., Fellow of Jesus College, Cambridge.
Professor of Pathology and Director of Medical Museum. 84 Durocher Street.

FRANK D. ADAMS, M.A. Sc., Ph.D. (Heidelberg) F.G.S.A.,
Logan Professor of Geology and Palæontology. 393 Guy Street.

HUGH L. CALLENDAR, M.A. (Cantab.), F.R.S., late Follow of Trtnity Coll., Cambridge.
W. C. McDonald Professor of Physics. McGill College.

HARRY BAMFORD, M.Sc. (Victoria, Eng.).
Associate Professor of Hydraulics. McGill College.

H. S. BIRKETT, M.D.
Professor of Laryngology. 123 Stanley Street.

C. W. COLBY, M.A. & Ph.D. (Harvard).
Professor of History. McGill College.

T. JOHNSON ALLOWAY, M.D.
Assistant Professor in Gynæcology. 23 Mackay Street.

F. G. FINLEY, M.B. (London), M.D.
Assistant Professor in Medicine and Clinical Medicine. 803 Dorchester Street.

H. A. LAFLEUR, B.A. M.D.
Assistant Professor in Medicine and Clinical Medicine. 58 University Street.

GEO. E. ARMSTRONG, M.D.
Assistant Professor in Clinical Surgery. 1127 Dorchester Street.

LECTURERS, &c.

PAUL T. LAFLEUR, M.A.
Lecturer in Logic and English. 58 University Street.

WM. A. CARLYLE, M.A.E.
Lecturer in Mining and Metallurgy. 135 Baile Street.

W. E. DEEKS, B.A., M.D.
Lecturer in Zoology, and Assistant Demonstrator of Anatomy. 34 Park Av.

LEIGH R. GREGOR, B.A.
Lecturer in German Language and Literature. McGill College.

RICHARD S. LEA, M.A.E.
Lecturer in Mathematics and Drawing. 2436 St. Catherine Street.

T. J. W. BURGESS, M.D. F.R.S.C.,
Lecturer on Mental Diseases. Protestant Hospital for Insane, Montreal.

PERCY C. RYAN, B.C.L.
Lecturer in Roman Law and Civil Procedure. N.Y. Life Building, Place d'Armes.

WYATT G. JOHNSTON, M.D.
Lecturer on Bacteriology and Medico Legal Pathology. 1018 Sherbrooke Street.

NEVIL NORTON EVANS, M.A.Sc.
Lecturer in Chemistry. 217 Milton Street.

CECIL B. SMITH, M.A.E.
Lecturer in Civil Engineering and Descriptive Geometry. 83 Shuter Street.

W. S. MORROW, M.D.
Lecturer in Physiology. 107 Prince Arthur Street.

R. TAIT McKENZIE., B.A., M.D.
Medical Examiner and Instructor in Gymnastics, and Assistant Demonstrator of Anatomy. 2436 St. Catherine Street.

J. P. STEPHEN.
Instructor in Elocution. 70 Cathcart Street.

MAXIME INGRES.
Instructor in French. 128 Crescent Street.

JOHN M. ELDER, B.A., M.D.
Senior Demonstrator of Anatomy. 3016 St. Catherine Street, Westmount.

J. G. McCARTHY, M.D.
Demonstrator of Anatomy. — 47 Union Avenue.

D. J. EVANS, M.D.
Demonstrator of Obstetrics. — 939 Dorchester Street.

N. D. GUNN, M.D.
Demonstrator of Histology Faculty of Medicine, and Lecturer on Materia Medica in the Faculty of Compar. Med. and Vet. Sce. — 727 Sherbrooke Street.

R. C. KIRKPATRICK, B.A., M.D.
Demonstrator of Surgery. — 163 Mansfield Street.

C. F. MARTIN, M.D.
Demonstrator of Pathology Faculty of Medicine, and Lecturer on Pathology Faculty of Compar. Med. and Vet. Sce. — 33 Durocher Street.

J. J. GARDNER, M.D.
Demonstrator of Ophthalmology. — 12 Phillips Place.

E. P. WILLIAMS, M.D.
Demonstrator of Pathology and Assistant Curator Faculty of Medicine. — 151 Metcalfe Street.

T. P. SHAW.
Assistant Demonstrator of Clinical Surgery. — 51 Coursol Street.

G. GORDON CAMPBELL, B.Sc., M.D.
Assistant Demonstrator of Medicine. — 2475 Notre Dame Street.

W. F. HAMILTON, M.D.
Assistant Demonstrator of Medicine. — Metcalfe Street.

JAS. A. HENDERSON, M.D.
Assistant Demonstrator of Anatomy. — 187 Bleury Street.

W. SCANE, M.D.
Assistant Demonstrator of Physiology,

J. D. CAMERON, M.D.
Assistant Demonstrator of Physiology.

KENNETH CAMERON, B.A., M.D.
Assistant Demonstrator in Clinical Surgery. — 903 Dorchester Street.

C. G. WOLF, M.D.
Assistant Demonstrator of Practical Chemistry.

SESSIONAL LECTURERS, &c.

J. L. DAY, M.A., M.D.
Sessional Lecturer in Classics. — 40 Durocher Street.

H. M. TORY, B.A.
Sessional Lecturer in Mathematics and Demonstrator in Physics. — McGill College.

Rev. J. L. MORIN, M.A.
Sessional Lecturer in French. — 65 Hutchison Street.

Miss CARRIE M. DERICK, B.A.
Demonstrator in Botany. — McGill College.

FRANK H. PITCHER, B.A. Sc.
Demonstrator in Physics. — McGill College.

LOUIS HERDT, B.A.Sc.
Demonstrator in Electrical Engineering. — McGill College.

DONALDA SPECIAL COURSE.

MISS HELEN S. GAIRDNER.
Lady Superintendent Donalda Ladies' Classes. — 47 Victoria Street.

MISS HELEN O. BARNJUM.
Instructress in Gymnastics. — 17 Brunswick Street.

LIBRARY.

CHAS. H. GOULD, B.A.
University Librarian. — 963 Dorchester Street.

H. MOTT.
Assistant Librarian. — 47 St. Famille Street.

General Statement.

SESSION OF 1895-96.

The Sixty-third Session of the University, being the Forty-third under the amended Charter, will commence in the autumn of 1895.

By Virtue of the Royal Charter, granted in 1821 and amended in 1852, the Governors, Principal and Fellows of McGill College constitute the Corporation of the University; and, under the Statutes framed by the Board of Governors with the approval of the Visitor, have the power of granting Degrees in all the Arts and Faculties in McGill College and Colleges affiliated thereto.

The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational, and while all possible attention will be given to the character and conduct of Students, no interference with their peculiar views will be sanctioned.

The educational work of the University is carried on in McGill College, Montreal, and in the Affiliated Colleges and Schools.

I. McGILL COLLEGE.

THE FACULTY OF ARTS.—The complete course of study extends over four Sessions of eight months each; and includes Classics and Mathematics, Experimental Physics, English Literature, Logic, Mental and Moral Science, Natural Science, and one Modern Language or Hebrew. The course of study is, with few exceptions, the same for all Students in the first two years; but in the third and fourth years extensive options are allowed, more especially in favour of the Honour Courses in Classics, Mathematics, Mental and Moral Science, Natural Science, English Literature, Modern and Semitic Languages. Certain exemptions are also allowed to professional students. The course of study leads to the Degrees of B.A., M.A. and LL.D.

The Degree of B.A. from this University admits the holder to the study of the learned professions without preliminary examination, in the Provinces of Quebec and Ontario, and in Great Britain and Ireland, etc.

In the Session 1894-5, special regulations were sanctioned by the Corporation, by which the degree of B.A. can be obtained along with the degree in the Faculty of Medicine or of Applied Science in six years. This is effected by avoiding the duplication of courses in the same subjects or in those which give the same educational training, and by a proper adaptation of the time tables. A certificate of Literate in Arts with be given along with the degree in either Faculty to candidates who have completed two years in Arts before entering the Professional Faculty.

The Degree of B.A. can be obtained along with the degree in the Faculty of Law also in six years.

THE DONALDA SPECIAL COURSE IN ARTS provides for the education of women, in separate classes, with course of study, exemptions, degrees and honours similar to those for men.

THE FACULTY OF APPLIED SCIENCE provides a thorough professional training, extending over four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, Electrical Engineering, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science.

THE FACULTY OF MEDICINE.—The complete course of study in Medicine extends over four Sessions of nine months each, and leads to the Degree of M.D., C.M.

THE FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.—The complete course extends over three Sessions of six months each, and leads to the Degree of D.V.S.

THE FACULTY OF LAW.—The complete course of law extends over three Sessions of eight months each, and leads to the Degrees of B.C.L. and D.C.L.

II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms as the students of McGill College.

MORRIN COLLEGE, *Quebec*.—Is affiliated in so far as regards Degrees in Arts and Law. [Detailed information may be obtained from Rev. A. T. Love, B.A., Principal.]

ST. FRANCIS COLLEGE, *Richmond, P.Q.*—Is affiliated in so far as regards the Intermediate Examinations in Arts. [Detailed information may be obtained from J. A. DRESSER, B.A., Principal.]

THE STANSTEAD WESLEYAN COLLEGE, *Stanstead, P.Q.*—Is affiliated in so far as regards the Intermediate Examination in Arts. [Detailed information may be obtained from the Rev. C. R. FLANDERS, B.A., Principal.]

III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on.

THE CONGREGATIONAL COLLEGE OF BRITISH NORTH AMERICA, *Montreal*. Principal, REV. WILLIAM M. BARBOUR, D.D., 58 McTavish St.

THE PRESBYTERIAN COLLEGE, MONTREAL, in connection with the Presbyterian Church in Canada. Principal, REV. D. H. MACVICAR, D.D., LL.D., 69 McTavish St.

THE DIOCESAN COLLEGE OF MONTREAL. Principal, REV. CANON HENDERSON, M.A., D.D., 896 Dorchester St.

THE WESLEYAN COLLEGE OF MONTREAL, Principal, REV. W. I. SHAW, M.A., LL.D., 228 University St.

(Calendars of the above Colleges and all necessary information may be obtained on application to their Principals.]

IV. McGILL NORMAL SCHOOL.

THE MCGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas, and may, on conditions stated in the announcement of the School, enter the classes in the Faculty of Arts for Academy Diplomas and for the Degree of B.A. Principal, S. P. ROBINS, LL.D., 30 Belmont St., Montreal.

V. AFFILIATED HIGH SCHOOLS, ETC.

The Trafalgar Institute for the higher education of women, Simpson St., Montreal, Principal, Miss Grace Fairley. The High School of Montreal, Metcalfe St., Principal, Rev. I. Elson Rexford, B.A. The Girls' High School of Montreal, Metcalfe St.

Schools which have prepared successful candidates for A.A. or for matriculation (June, 1895).

High School, Montreal; Girls' H. S., Montreal; High School, Quebec; Girls' H. S., St. John, N.B.; Coaticook Acad.; Cowansville Acad.; Huntingdon Acad.; Inverness Acad.; Knowlton Acad.; Lachute Acad.; Sherbrooke Boys' Acad.; Sherbrooke Girls' Acad.; Stanstead Wesleyan Coll; Waterloo Acad.; Ottawa Coll. Inst.; Almonte H. S.; Bishop Ridley Coll., St. Catharines; Montreal Coll. Inst.; Bedford Acad.; Girls' H. S., Quebec; St. Francis College School; Brockville Coll. Inst.; Cote St. Antoine Acad.; Peterboro Coll. Inst; Williamstown H. S.; Three Rivers Acad.; Danville Acad.; Mansonville Model S.; Paspebiac Model S.; Montreal Diocesan Coll; Sarnia Coll. Inst.; Upper Canada Coll.; Woodstock Coll.; Pictou Acad.; Misses Symmers & Smith School, Montreal; Sabrevois School, Montreal; Abingdon School, Montreal; Berthier Grammar School; Compton Ladies Coll.; Cookshire Acad.; Dunham Ladies Coll.; Granby Acad.; Sutton Acad.; St. Andrew's Model School; St. Hyacinthe Model School; Dunham Model School; Gananoque H. S.; Hamilton Coll. Inst.; Kingston Coll. Inst.; Bishop's College School; Moncton H. S.; Lorette School, Scotland; Pembroke H. S.; Sydney, B. C. Acad.; Grammar School, St. John, N.B.; Coligny Coll., Ottawa; Arnprior H. S.

ACADEMICAL YEAR 1895-96.

SEPTEMBER, 1895.

1 SUNDAY	
2 Monday	Normal School opens. Lectures in Law begin. Matriculation in Law.
3 Tuesday	
4 Wednesday	
5 Thursday	
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	Meeting of Normal School Com.
12 Thursday	
13 Friday	
14 Saturday	
15 SUNDAY	
16 Monday	Meeting of Faculty of Arts.
17 Tuesday	Mat. and Sup. Exn's in Classics Exhib. and Scholarship Exam.
18 Wednesday	Mat. and Sup. Ex'ns in Math's Exhib. & Scholarship Exam.
19 Thursday	Mat. & Sup. Ex'ns in English, Logic, Ment. and Mor. Phil. Exhib. and Sch. Exm'ns.
20 Friday	Mat. & Sup. Ex'ns in Modern Lang's and Nat. Sc.; Exhib. and Sch. Exam'ns.
21 Saturday	
22 SUNDAY	
23 Monday	Lect's in Arts and App. Sc. begin. Mtgs. Fac. Arts and App. Sc. Summer Essays in App. Sc.
24 Tuesday	
25 Wednesday	
26 Thursday	
27 Friday	Meeting of Faculty of Arts.
28 Saturday	Meeting of Governors.
29 SUNDAY	
30 Monday	

OCTOBER, 1895.

1 Tuesday	Session of Veterinary Faculty begins. Meeting of Fac. of App. Sc.
2 Wednesday	Meeting of Normal School Committee.
3 Thursday	
4 Friday	
5 Saturday	Founder's Birthday. The Wm. Molson Hall opened, 1862.
6 SUNDAY	
7 Monday	
8 Tuesday	
9 Wednesday	
10 Thursday	
11 Friday	Meeting of Faculty of Arts.
12 Saturday	
13 SUNDAY	
14 Monday	
15 Tuesday	
16 Wednesday	
17 Thursday	Physics Building Com.
18 Friday	
19 Saturday	Law Examinations.
20 SUNDAY	
21 Monday	Meeting of Museum Com.
22 Tuesday	Meeting of Library Com.
23 Wednesday	Regular Meeting of Corporation Reps. Schol. & Exh. Accounts audited.
24 Thursday	
25 Friday	Meeting of Faculty of Arts.
26 Saturday	Meeting of Governors. Law Examinations.
27 SUNDAY	
28 Monday	
29 Tuesday	
30 Wednesday	
31 Thursday	New Library opened 1893.

NOVEMBER, 1895.

1 Friday	
2 Saturday	Law Examinations
3 SUNDAY	
4 Monday	Meeting of Faculty of App. Sc.
5 Tuesday	
6 Wednesday	Meeting of Normal School Com.
7 Thursday	
8 Friday	Meeting of Faculty of Arts.
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	
14 Thursday	
15 Friday	
16 Saturday	
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	Meeting of Faculty of Arts.
23 Saturday	Meeting of Governors.
24 SUNDAY	
25 Monday	
26 Tuesday	
27 Wednesday	
28 Thursday	
29 Friday	
30 Saturday	

DECEMBER, 1895

1 SUNDAY	
2 Monday	Meeting of Faculty of App. Sc.
3 Tuesday	
4 Wednesday	Meeting of Nor. Sch. Comm.
5 Thursday	
6 Friday	Meeting of Fac. of Arts.
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	
12 Thursday	
13 Friday	Lectures in Arts and App. Sc. end.
14 Saturday	Law Examinations.
15 SUNDAY	
16 Monday	Christmas Ex. in Arts and Applied Science begin. Law Examinations
17 Tuesday	
18 Wednesday	
19 Thursday	
20 Friday	
21 Saturday	Christmas Vacation begins.
22 SUNDAY	
23 Monday	
24 Tuesday	
25 Wednesday	Christmas-Day.
26 Thursday	
27 Friday	
28 Saturday	Meeting of Governors.
29 SUNDAY	
30 Monday	
31 Tuesday	

NOTE.—Meetings of the Faculty of Arts are held at 4.30 P.M. unless otherwise specified.

JANUARY, 1896.

1 Wednesday	
2 Thursday	
3 Friday	
4 Saturday	Christmas Vacation ends.
5 SUNDAY	
6 Monday	Lectures in Arts, Law, Med. & App. Science recommence. Meetings of Facs. of Arts and App. Sci.
7 Tuesday	
8 Wednesday	Meeting of Nor. Sch. Comm.
9 Thursday	
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	Phys. Build'g Com.
17 Friday	Meeting of Fac. of Arts.
18 Saturday	
19 SUNDAY	
20 Monday	Meeting of Museum Com.
21 Tuesday	Meeting of Library Com.
22 Wednesday	Regular Meet'g of Corporation. Examiners appointed. Annual Report to Visitor.
23 Thursday	
24 Friday	
25 Saturday	Meeting of Governors.
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	
31 Friday	Meeting of Fac. of Arts. Theses for M.A. and LL.D. to be sent in.

FEBRUARY, 1896.

1 Saturday	
2 SUNDAY	
3 Monday	Meeting of Fac. App. Science.
4 Tuesday	
5 Wednesday	Meeting of Nor. School Com.
6 Thursday	
7 Friday	
8 Saturday	Law Examinations.
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	Meeting of Faculty of Arts. Supplemental Exam's in Arts and Applied Science.
15 Saturday	Law. Exams.
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	No lectures.
20 Thursday	
21 Friday	
22 Saturday	Law. Exams.
23 SUNDAY	
24 Monday	
25 Tuesday	Physics & Engineering Building opened 1893.
26 Wednesday	
27 Thursday	
28 Friday	Meeting of Faculty of Arts.
29 Saturday	Meeting of Governors.

MARCH, 1896.

1 SUNDAY	
2 Monday	Theses for B.C.L. Meeting of Fac. Ap. Science.
3 Tuesday	
4 Wednesday	Meeting of Nor. Sch. Com.
5 Thursday	
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	
12 Thursday	
13 Friday	Meeting of Fac. of Arts.
14 Saturday	Law Examinations.
15 SUNDAY	
16 Monday	Exam's in Med. begin. Meeting of Fac. of Ap. Science.
17 Tuesday	
18 Wednesday	
19 Thursday	
20 Friday	Meeting of Faculty of Arts. Reports of Attendance on Lects.
21 Saturday	Law Examinations.
22 SUNDAY	
23 Monday	
24 Tuesday	
25 Wednesday	
26 Thursday	
27 Friday	Conv. for Degrees in Veterinary Science.
28 Saturday	Meeting of Governors.
29 SUNDAY	
30 Monday	Lects. in Arts and Ap. Sc. end. Meeting of Fac. of App. Sc.
31 Tuesday	Convocation for Degrees in Medicine.

APRIL, 1896.

1 Wednesday	Meeting of Nor. Sc. Committee. Exams. in Arts begin.
2 Thursday	
3 Friday	Good Friday. Easter vacation begins.
4 Saturday	
5 SUNDAY	Easter.
6 Monday	
7 Tuesday	Easter vacation ends.
8 Wednesday	
9 Thursday	
10 Friday	Meeting of Fac. of Arts.
11 Saturday	Examinations in Law.
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	Phys. Build'g Com.
17 Friday	Lectures in Law end.
18 Saturday	Examinations in Law.
19 SUNDAY	
20 Monday	Meeting of Museum Committee. Law Examinations.
21 Tuesday	Meeting of Library Committee. Law Examinations.
22 Wednesday	Regular meeting of Corporation. Law Examinations.
23 Thursday	
24 Friday	
25 Saturday	Meeting of Governors.
26 SUNDAY	
27 Monday	Declaration of results of Exam. in Arts.
28 Tuesday	
29 Wednesday	
30 Thursday	Convocation for Degrees in Arts Law and Applied Science.

MAY, 1896.

1 Friday	Meeting of Examiners for Sch. Examinations. Examinations in Normal School begin.
2 Saturday	
3 SUNDAY	
4 Monday	
5 Tuesday	
6 Wednesday	Meeting Nor. Sch. Committee.
7 Thursday	
8 Friday	
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	
14 Thursday	
15 Friday	
16 Saturday	
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	
23 Saturday	
24 SUNDAY	Whit Sunday. Queen's Birthday.
25 Monday	
26 Tuesday	
27 Wednesday	Normal Sch. closes for Summer Vacation.
28 Thursday	
29 Friday	
30 Saturday	Meeting of Governors.
31 SUNDAY	Trinity Sunday.

JUNE, 1896.

1 Monday	Examinations for Matric. and Associate in Arts begin.
2 Tuesday	Medical Examinations.
3 Wednesday	Normal School Committee.
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	Phys. Building Com.
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	Meeting of Museum Committee.
16 Tuesday	Meeting of Library Committee.
17 Wednesday	Regular Meeting of Corporat'n. Report of Normal School.
18 Thursday	
19 Friday	
20 Saturday	
21 SUNDAY	
22 Monday	
23 Tuesday	
24 Wednesday	
25 Thursday	
26 Friday	
27 Saturday	Meeting of Governors.
28 SUNDAY	
29 Monday	
30 Tuesday	

JULY, 1896

1 Wednesday	
2 Thursday	
3 Friday	
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	
8 Wednesday	
9 Thursday	
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	
18 Saturday	
19 SUNDAY	
20 Monday	
21 Tuesday	
22 Wednesday	
23 Thursday	
24 Friday	
25 Saturday	
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	
31 Friday	

AUGUST, 1896.

1 Saturday	
2 SUNDAY	
3 Monday	
4 Tuesday	
5 Wednesday	
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	Peter Redpath Museum opened 1882.
15 Saturday	
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	
21 Friday	
22 Saturday	
23 SUNDAY	
24 Monday	
25 Tuesday	
26 Wednesday	
27 Thursday	
28 Friday	
29 Saturday	
30 SUNDAY	
31 Monday	

FACULTY OF ARTS.

EXHIBITION, SCHOLARSHIP, &c., EXAMINATIONS, SEPTEMBER, 1895.

DAY.	DATE	FIRST YEAR	SECOND YEAR.	THIRD YEAR.	HOUR.
Tuesday.	17	Greek.	Greek.	Greek.	9 to 12
"	17	Latin.	Latin.	Latin Prose Comp.	2 to 5
"	17			Mathematics.	9 to 12
Wednesday.	18	Mathematics.	Mathematics.	Latin.	9 to 12
"	18			Mathematics.	9 to 12
"	18			Botany.	9 to 12
"	18	Mathematics.	Mathematics.	Ancient History.	2 to 5
"	18			Botany.	2 to 5
Thursday.	19	English.	English.	English.	9 to 12
"	19			Logic.	9 to 12
"	19	English.		English.	2 to 5
"	19		Chemistry.	Chemistry.	2 to 5
Friday.	20			Mathematics.	9 to 12
"	20			Botany.	9 to 12
"	20		French.	French.	9 to 12
"	20	Grammar and Comp. (Classics.)	General Paper. (Classics.)	English Composition	2 to 5
Monday.	23		Mathematics.	Mathematics.	9 to 12
			English.		2 to 5

CHRISTMAS EXAMINATIONS DECEMBER, 1895.

DAY.	DATE	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
Monday.	16	Latin.	Latin.	Mechanics.	Astronomy.
"	16		M'matics, P.M.		
Tuesday.	17	Greek	Greek.	Greek.	Greek.
"	17			Zoology, P.M.	Latin, P.M.
Wednesday.	18	Mathematics.	Psychology.	Latin.	Moral Philosophy
"	18	French, P.M.	French, P.M.	Ment. Phil., P.M.	Geology, P.M.
Thursday.	19	Chemistry.			
"	19	German, P.M.	German, P.M.		
"	19	Hebrew, P.M.	Hebrew, P.M.		
Friday.	20	English.			

FACULTY OF ARTS.

SESSIONAL AND HONOUR EXAMINATIONS, APRIL, 1896.

Date.	First Year.	Second Year.	Third Year.	Fourth Year.
April.	A.M. P.M.	A.M. P.M.	A.M. P.M.	A.M. P.M.
1 Wed.	Hebrew	Hebrew	Hebrew.	Hebrew and B.A. Honours.
2 Thurs.	.....	....	....	....
3 Fri.	Good Friday. Easter	vacation begins.....	.....	.....
4 Sat.	.....	....	....	.....
5 Sun.	Easter Day	....	....	....
6 Mon.	....	.....	.....	.....
7 Tues.	Easter vacation ends.	....	....	.....
8 Wed.	Greek	Greek.	Mechanics.....	Ethics. Ethics.
9 Thurs.	Latin....Anc. History	Latin...Composition.	Latin.....	Latin. Latin.
10 Fri.	English.....English.	English. English.	Ex. Phy- English. sics.	Ex. Phy- History. sics.
11 Sat.	....	.....	.....	.....
13 Mon.	Geometry and Arithmetic....	Mathematics.....	Greek.....	Mechanics and B.A. Honours.
14 Tues.	Trigonometry and Algebra.....	Mathematics...	Astronomy and .... Optics.....	Astr'y. and Optics. B.A. Honours.
15 Wed.	French. German.	French. German.	Metaphysics.....	Geology. Geology.
16 Thurs.	Chemistry	Logic.....	....Zoology	Greek. History.
17 Fri.	.....	Botany.....Botany.	French. German.	French. German. B.A. Honours.
20 Mon.	Honour Examinations	Honour Examinations	Honour Exam'tions	B.A. Honours.
21 Tues.	Meeting of	Examiners and Facul	ty. 9.30 A. M.	
22 Wed.	Honour Examinations	Honour Examinations	Honour Exam'tions	B. A. Honours.
23 Thurs.	Regu Meeting of	lar Meeting of Cor Examiners and Facul	poration. ty. 9.30 A. M.	
24 Fri.	Meeting of Examin	ers and Faculty. 9.30	A.M.	
25 Sat.	Meeting of	Examiners and Facul	ty. 9.30 A. M.	
27 Mon.	Meeting of Examin	ers and Faculty. 9.30	A.M. Declaration	of results.
28 Tues.	.....	.....	.....	.....
29 Wed.	.....	.....	.....	.....
30 Thurs.	Convocation for Degr	ees in Arts.		

The Examinations begin at 9 A.M. and 2 P.M. when not specified otherwise.

FACULTY OF APPLIED SCIENCE.

SESSIONAL EXAMINATIONS, APRIL, 1895.

Days.	First Year.	Second Year.	Third Year.	Fourth Year.
W. April 1	.....	.....	.....	.....
T. " 2	.....	.....	.....	.....
F. " 3	Good Friday.	.....	.....	.....
S. " 4	.....	.....	.....	.....
Sun. " 5	Easter Sunday.	.....	.....	.....
M. " 6	.....	.....	.....	Mechl. Eng. Geodesy. Assaying.
T. " 7	Mathematics.	Chemistry	Machine Design. Surveying.	Th. of Structures. Dyn. of Machin'y.
W. " 8	Geom. Drawing.	Surveying.	Theory of Structures	Th. of Struct. a.m. & p.m. Geol.(Adv.)
T. " 9	Math. Lab.	Kinematics.	Theory of Structures a.m. and p m.	Th. of Structures. Elect. Engr.
F. " 10	English.	Exp. Physics.	Exp. Physics.	Th. of Structures. Drawing (Mechl.)
S. " 11	Desc. Geometry.	Desc. Geometry.	Phys. Lab. Wk. Desc. Geom.	.....
Sun. " 12	.....	.....	.....	Elect. Engin. Th. of Struct. Adv
M. " 13	Mathematics.	Mathematics.	Elect. Eng. Chemistry.	Hydraulics. Phys. Lab. Wk.
T. " 14	Pract. Chem. (1)	Org. Chem.	Org. Chem.	Machine Design.
W. " 15	French a.m. German p,m.	French a.m. German p.m.	Dyn. of Mach. Geology.	Hydraulics (Adv.). Metallurgy.
T. " 16	Chemistry.	Drawing (Mechl). Zoology p.m.	Drawing (Mechl). Mining.	Thermodynamics.
F. " 17	Pact. Chem. (2)	Botany a.m. & p.m.	Mathematics.	Railway Eng. a.m. and p.m.
S. " 18	Pact. Chem. (3)	.....	Railway Eng. a.m.	.....
Sun. " 19	.....	.....	.....	.....
M. " 20	Mathematics.	Mathematics.	Mathematics.	.....
Th. " 30	Convocation.	.....	Mineralogy (Adv.).	.....

N.B.—The Examinations begin at 9 00 a.m. and 2.00 p.m. when not specified otherwise.

Faculty of Arts.

THE PRINCIPAL (Ex-Officio).

Professors:—DAWSON, (*Emeritus.*)
JOHNSON,
CORNISH,
DAREY,
MURRAY,
HARRINGTON,
MOYSE,
PENHALLOW,
COUSSIRAT,

Professors:—COX,
EATON,
ADAMS,
CALLENDAR,

Lecturers:—LAFLEUR,
GREGOR,
DEEKS,
COLBY,
EVANS.

Dean of the Faculty:—ALEXANDER JOHNSON, M.A., LL.D.

[CONTENTS.—*Matriculation, etc.*, § I.; *Exhibitions, etc.*, § II.; *Course of Study*, § III.; *Examinations, Degrees, etc.*, § IV.; *Exemptions, etc.*, § V.; *Medals, etc.*, § VI.; *Licensed Boarding Houses*, § VII.; *Attendance and Conduct*, § VIII.; *Library*, § IX.; *Peter Redpath Museum*, § X.; *McDonald Physics Building*, § XI.; *Fees, etc.*, § XII.; *Courses of Lectures*, § XIII.]

The next session of this Faculty will begin on September 17th, 1895, and will extend to April 30th, 1896.

§ I. MATRICULATION AND ADMISSION.

In this University those only who attend Lectures are denominated Students.

Students in the Faculty of Arts are classified as Undergraduates or Partial Students. The conditions of admission for each and for Students of other Universities are given below.

1. UNDERGRADUATES.

Undergraduates alone can proceed to the degree of B.A. Candidates for admission to the First Year, as Undergraduates, are required to pass the First Year Entrance Examination. The successful Candidates are arranged as First Class, Second Class, and Passed. To the most deserving in the First Class, the First Year

Exhibitions are awarded. For those who aim at passing only, a minimum course is appointed, and there are two examinations in the year as follows :—

(1) That held in the first week of June, concurrently with the examinations for Associate in Arts. Schools desirous to take advantage of this may send their pupils for examination to McGill College ; or, if at a distance, by sending in to the Secretary of the University the names of Deputy Examiners for approval, with a list of candidates, on or before May 1st, may have papers sent to them. (2) That held at the opening of the session, on September 17th and following days, in McGill College alone.

In 1895 the following regulations with regard to the First Year Entrance Examination come into operation :—

1. Any candidate who fails in one and not more than one subject at the September Entrance Examination may pass an equivalent Examination at Christmas, or at the following Sessional Examinations, in the precise part of the subject in which he failed. In this regulation, Classics, Mathematics, and English are each regarded as a single subject.

2. The Entrance Examinations for the First Year will be held only in June and September on the days appointed in the Calendar, except in cases of severe illness or domestic affliction.

As the examination is intended as a test of qualification for admission to the classes of the University, certificates of passing are not granted except to those who subsequently attend lectures. Candidates who may have passed the examination are not "Matriculated," *i.e.*, enrolled on the "Matricula" of the University, until they have paid all the prescribed fees for the session and complied with the other University regulations. (See "Directions" below.)

First Year Entrance Examination.

(*a*) *For Passing only.*

Examinations begin on June 1st in McGill College and local centres ; on September 17th in McGill College only.

Greek.—Xenophon, Anabasis, Book I.; Greek Grammar.

Latin.—Caesar, Bell. Gall., Books I and II.; and Virgil, Aeneid, Book I., Latin Grammar.

[The A.A. standard in Latin will be accepted for 1895, i.e. two books of Caesar will be required from all but the A.A. Candidates.]

Mathematics.—Arithmetic, including a knowledge of the Metric system ; Algebra to Quadratic Equations (inclusive) as in Colenso ; Euclid's Elements, Books I., II., III.

English.—Writing from Dictation. A paper on English Grammar *including Analysis.* A paper on the leading events of English History. Essay on a subject to be given at the time of the examination.

French.—Grammar up to the beginning of Syntax. An easy translation from French into English.

Candidates unable to take French are not excluded, but will be required to study German after entrance.

At the September (but not at the June) examinations, an equivalent amount of other books or other authors in Latin and Greek than those named may be accepted by the Examiners on application made through the Professor of Classics. At the June examination, candidates from Ontario may present an equivalent amount from the books prescribed for the Junior Matriculation Examination of the University of Toronto.

Candidates who at the examination for Associate in Arts have passed in the above subjects are admitted as Undergraduates.

The Matriculation or Junior leaving Examination accepted by the Universities of Ontario is accepted by the Faculty, in so far as the subjects of their programme satisfy the Examiners of the Faculty, *i.e.*, when the subjects taken are the same as, or equivalent to, those required in McGill University.

For Candidates from Ontario, Second Class non-professional certificates will be accepted *pro tanto* in the Examination.

For qualifications required of Normal School Students, see Normal School Regulations.

Candidates who fail in one or more subjects at the June examination, and present themselves again in the following September, will be exempted from examination in those subjects only in which the Examiners may have reported them as specially qualified.

(*b*) *Higher Examination—For First Class, Second Class and Passing.*

The Examination will be held on September 17th and following days in McGill College only. (For Exhibitions, see § II.)

Greek.—Homer, Iliad, Bk. IV. or VI.; Xenophon, Anabasis, Bk. I. or V.; Homer, Odyssey, Bk. VII. or XI.

Latin.—Cicero, in Catilinam, Orat. I. and II., or, Horace, Odes, III. and IV. Caesar, Bell. Gall., Bks. I. and II. or V. and VI.; Virgil, Aeneid, Bk. I. or II.

A paper on Greek and Latin Grammar.

Translation at sight from the easier Latin authors. Abbott's Arnold's Greek Prose Composition, Exercises 1 to 25. Collar's Practical Latin Composition, Pts. III. and IV., or an equivalent, such as Arnold's Latin Prose Composition.

Mathematics.—Euclid, Books I., II., III., IV.; Algebra to end of Harmonical Progression (Colenso); Arithmetic.

English.—English Grammar and Composition.—(Mason's Grammar, omit Derivation and Appendix.)

French.—(Solely as a test of qualification to join the French Class).—Grammar up to the beginning of Syntax ; and easy translation from French into English, Candidates unable to take French will be required to study German after entrance.

SECOND YEAR ENTRANCE EXAMINATION.

Candidates may be admitted into Second Year as Undergraduates, if able to pass the Second Year Entrance Examination. The regulations for this correspond to those for the First Year, the higher examination being the same as that for the Second Year Exhibitions (see § II.) held in September ; or the candidates may take the First Year Sessional Examinations held in April. There is besides :

For Passing only.

An Examination beginning on Sept. 17th, in McGill College only.

In Classics.—*Greek.*—Homer, Iliad, Book VI. ; Xenophon, Anabasis, Book I Grammar and Prose Composition.

Latin.—Virgil, Aeneid, Book VI. ; Cicero, Orations against Catiline ; Grammar and Prose Composition.

(An equivalent amount of other books or other authors in Latin and Greek than those named above may be accepted by the Examiners for entrance into the Second Year, on application made through the Professor of Classics.)

In Mathematics :—

Euclid.—Books I., II., III., IV., VI., with defs. of Book V. (Omitting Propositions 27, 28, 29 of Book VI.)

Algebra.—To end of Quadratic Equations (as in Colenso's Alg.).

Trigonometry.—Galbraith and Haughton's Trigonometry, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

Arithmetic.—Elementary Rules, Proportion, Interest, Discount, etc., Vulgar and Decimal Fractions, Square Root, Metric System.

English Literature.—Writing from Dictation, English Grammar, including Analysis, English Composition, English History (Buckley). Essay.

In French.—French Grammar ; or (instead of French) *German*, in which knowledge sufficient to enable the Candidate to join the regular class will be required.

In Chemistry.—The Chemistry of the non-metallic Elements and of the more common metals.

[*Note.*—Candidates unable to pass in French or German are not excluded, but are required to begin German, and to continue the study of it for two years.

2. PARTIAL STUDENTS.—STUDENTS OF OTHER UNIVERSITIES.

PARTIAL STUDENTS.—All Students who are not Undergraduates or Graduates, or Students in Special Courses, are called Partial Students. Candidates for admission as Partial Students must satisfy the professors of the several subjects they select of their fitness to attend the lectures, or be examined in these subjects, as may from time to time be determined by the Faculty,

The subjects in which an examination is necessary are:—Latin, Greek, Mathematics, English, French. Candidates are required to appear at the ordinary entrance examinations announced above; but on application to the Faculty, may, for sufficient cause, have a later day appointed.

STUDENTS OF OTHER UNIVERSITIES may be admitted, on production of certificates, to a like standing in this University, after examination by the Faculty.

3. GENERAL REGULATIONS.

Candidates for entrance into the First Year of the Faculty of Medicine in McGill University may pass in the above examinations.

Every student is expected to present, on his entrance, a written intimation from his parent or guardian of the name of the minister of religion under whose care and instruction it is desired that the Student should be placed, who will thereupon be invited to put himself in communication with the Faculty on the subject. Failing such intimation from his parent or guardian, the Faculty will endeavor to establish befitting relations.

Every student is required to sign the following:—

DECLARATION.

"I hereby declare that I will faithfully observe the statutes, rules and ordi-
"nances of this University of McGill College to the best of my ability."

4. DIRECTIONS TO CANDIDATES FOR MATRICULATION OR ADMISSION.

Candidates are required:—

(*a*) To pay the Entrance Examination fee (see page 31) to the Acting Secretary, and to present themselves to the Dean at the beginning of the session, and fill up a form of application for matriculation or admission (§ I.).

(*b*) To pass or to have passed the required examinations (§ I.). Candidates claiming exemption, according to the regulations above given, from examination in any subject on the ground of examinations previously passed, must present certificates of standing in the latter.

(*c*) To procure tickets from the Registrar (§ XII.), and to sign the declaration above given.

(*d*) To present their tickets to the Dean. (Fine, etc., for delay stated in § XII.)

(*f*) To provide themselves with the Academic dress (§ VIII.).

§ II. SCHOLARSHIPS AND EXHIBITIONS.

GENERAL REGULATIONS.

1. A Scholarship is tenable for *two* years; an Exhibition for *one* year.

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three sessions have elapsed since their Matriculation; and also to Candidates who have obtained what the Faculty may deem equivalent standing in some other University, provided that application be made before the end of the Session preceding the examination.

3. Scholarships are divided into two classes:—(1) *Science* Scholarships; (2) *Classical and Modern Language* Scholarships. The subjects of examination for each are as follows:—

Science Scholarships:—Differential and Integral Calculus; Analytic Geometry; Plane and Spherical Trigonometry; Higher Algebra and Theory of Equations; Botany; Chemistry; Logic. (For subdivision, see below.)

Classical and Modern Language Scholarships:—Greek; Latin; English Composition; English Language, Literature, and History; French or German.

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examinations, provided that not more than two sessions have elapsed since their Matriculation; and also to candidates for entrance into the Second Year.

The subjects of examination are as follows:—

First Year Exhibitions.—Classics, Mathematics, English.

Second Year Exhibitions.—Classics, Mathematics, English Language and Literature, Chemistry and French or German.

5. The First and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time.

7. Exhibitions and Scholarships will not necessarily be awarded to the best answerers at the Examinations. Absolute merit will be required.

8. If in any one College Year there be not a sufficient number of candidates showing absolute merit, any one or more of the Exhibitions or Scholarships offered for competition may be transferred to more deserving candidates in another year.

9. A successful candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz. :—In October, December, February and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every Session.

There are at present seventeen Scholarships and Exhibitions :—

THE JANE REDPATH EXHIBITION, founded by Mrs. Redpath, of Terrace Bank, Montreal :—value, about $90 yearly, open to both men and women.

TEN MCDONALD SCHOLARSHIPS AND EXHIBITIONS, founded by W. C. McDonald, Esq., Montreal :—value, $125 each yearly.

THE CHARLES ALEXANDER SCHOLARSHIP, founded by Chas. Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects —value, $120 yearly.

THE GEORGE HAGUE EXHIBITION, given by George Hague, Esq., Montreal, for the encouragement of the study of Classics :—value, $125 yearly.

THE MAJOR H. MILLS SCHOLARSHIP, founded by bequest of the late Major Hiram Mills :—value, $100 yearly.

THE BARBARA SCOTT SCHOLARSHIP, founded by the late Miss Barbara Scott, for the encouragement of the study of the Classical languages and literature : —value, $100 to $120 yearly.

TWO DONALDA EXHIBITIONS, open to women in the Donalda Department —value, $100 and $120 yearly.

EXHIBITIONS AND SCHOLARSHIPS OFFERED FOR COMPETITION AT THE OPENING OF THE SESSION, SEPT., 1895.

N.B.—*Three of the Exhibitions are open to women* (*two of these to women alone, either in the First or Second Year*).

To students entering the First Year, three Exhibitions of $125, *two of* $100, *and one of* $120.

Subjects of Examination :—

GREEK.—Homer, Iliad, Bk. IV. or VI. ; Xenophon, Anabasis, Bk. I. or V. ; Homer, Odyssey, Bk. VII. or XI.

LATIN.—Virgil, Aeneid, Bk. I. or II. ; Cicero, In Catilinam, Orat. I. and II. or Horace, Odes, III. and IV. ; Caesar, Bell. Gall., Bks. I. and II., or V. and VI.

A paper on Greek and Latin Grammar.

Text-Books.—Hadley's or Goodwin's Greek Grammar. Abbott's Arnold's Greek Prose Composition, exercises 1 to 25. Allen and Greenough's Latin Grammar, Arnold's Latin Prose Composition by Bradley, or Collar's Latin Composition, Pts. III. and IV.

Mathematics.—Euclid, Bks. I., II., III., IV. ; Algebra to end of Harmonical Progression (Colenso) ; Arithmetic.

English.—English Grammar and Composition.—(Mason's Grammar, omit Derivation and Appendix.)

The First Year Exhibitions will be awarded to the best answerers in the above course, provided there be absolute merit.

But in subsequently distributing the Exhibitions of higher value among the successful candidates, answering in the following subjects will be taken into account also :—

1. A retranslation into Latin of an English version of some passages from one of the easier Latin Prose writers. (For specimens, see Smith's Principia Latina, Part V.)

2. Euclid, Book VI. (omitting Props. 27, 28, 29), with Defs. of Book V.

3. English :—An Examination upon one of Shakespeare's plays. For 1895—Macbeth.

4. French :—Syntax and translation from English into French, in addition to the entrance course.

To Students entering the Second Year, three Exhibitions of $125, *one of* $100, *and one of* $120 (*see also* N.B. *above*).

Subjects of Examination :—

Greek.—Xenophon, Hellenics, I. and II.; Demosthenes, Olynthiacs, I. and II.; Herodotus, Bk. III.

Latin.—Virgil, Georgics, Bk. I.; Horace, Odes, Bk. I.; Livy, Bk. XXII.

Greek and Latin Prose Composition, and translation at sight from the less difficult Latin and Greek authors.

A Paper on Grammar and History.

Text-books.—Myer's Ancient History, Abbott's Arnold's Greek Prose Composition, Latin Prose through English idiom (Abbott).

Mathematics.—Euclid (six books); Algebra (Hall & Knight's Advanced); McDowell's Exercises in Modern Geometry; Theory of Equations (in part); Trigonometry (first four chapters, Galbraith & Haughton's).

English Literature.—Mason's Grammar. Shakespeare, *As You Like It.* Trench, *Study of Words.*

Chemistry.—Roscoe's Lessons in Elementary Chemistry, as far as page 264.

French.—Darey, Principes de Grammaire française; LaFontaine, les Fables, livres IV and V; Molière, l'Avare; Colloquial exercises; Dictation.

Or, instead of French :—

German.—German Grammar and Composition; Grimm's Kinder—und Hausmærchen (Vandersmissen's edition); Schiller—Der Neffe als Onkel, Der Gang nach dem Eisenhammer; Dictation; Translation from English into German.

A candidate for a Second Year Exhibition to be successful must not, at the special examination, be placed in the Third Class in more than one of the ordinary subjects. The award is made on the aggregate of the marks among those who fulfil this condition.

To students entering the Third Year, three Scholarships of $125 *and one of* $120, *tenable for two years.*

One of these is offered in Mathematics and Logic, and one in Natural Science and Logic, as follows :--

1. *Mathematics.*—Differential Calculus (Williamson, Chaps. 1, 2, 3, 4, 7, 9; Chap. 12, Arts. 168-183 inclusive; Chap. 17, Arts. 225-242 inclusive). Integral Calculus (Williamson, Chaps. 1, 2, 3, 4, 5; Chap. 7, Arts. 126-140 inclusive; Chap. 8, Arts. 150-156 inclusive; Chap. 9, Arts. 168-176 inclusive). Analytic Geometry (Salmon's Conic Sections, subjects of Chaps. 1-13 [omitting Chap. 8], with part of Chap. 14). Lock's Higher Trigonometry; McLelland and Preston's Spherical Trigonometry, Part I. Salmon's Modern Higher Algebra (first four chapters). Todhunter's or Burnside and Panton's Theory of Equations (selected course).

Logic, as in Jevon's Elementary Lessons in Logic.

2. *Natural Science.*—*Botany*, as in Gray's Structural and Systematic Botany. *Canadian Botany*, including a practical acquaintance with the Spermaphytes, Pteridophytes and Bryophytes. *Chemistry*, as in Roscoe's Lessons in Elementary Chemistry.

Logic, as in Jevon's Elementary Lessons on Logic.

Two will be given on an Examination in Classics and Modern Languages, as follows :—

Classics.—*Greek.*—Plato, Apology and Crito; Xenophon, Memorabilia, Book I.; Thucydides, Book VI. *Latin.*—Horace, Epistles, Book I.; Livy, Books XXI., XXII.; Virgil, Georgics, Book II; Sallust, Catiline; Cicero, Select Letters (Pritchard and Bernard; Clarendon Press Series). Greek and Latin Prose Composition, and Translation at sight.

History.—*Text-Books.*—Smith's Student's Greece; Mommsen's Rome (abridged).

English Language and Literature.—Spalding's English Literature (Chap. VI., Part III., to end of book); Shakspere, Tempest; Milton's Paradise Lost, Books I. and II.; Trench, Study of Words.

English Composition.—High marks will be given for this subject.

French.—Racine, Britannicus; Molière, les Femmes savantes. French Grammar. Bonnefon, les Ecrivains célèbres de la France. Translation from English into French; Dictation.

Or instead of French:

German.—Schiller—Egmont's Leben und Tod (Buchheim), Die Kraniche des Ibycus, Das Lied von der Glocke, Der Kampf mit dem Drachen; Gœthe.—Torquato Tasso; German Grammar and Composition; Translation from English into German; Dictation.

Classical Subjects for Exhibitions, September, 1896.

FIRST YEAR.—*Greek.*—Homer, Iliad, Bk. IV. or I.; Xenophon, Anabasis, Bk. I.; Homer, Odyssey, Bk. VII.

Latin.—Virgil, Aen., Bk. or III.; Cicero, in Catilinam, I., II.; or, Horace, Odes (one Book); Caesar, Bell. Gall., I. and II. or V. and VI.

SECOND YEAR.—*Greek.*—Xenophon, Hellenics, I. and II.; Demosthenes, Olynthiacs, I. and II.; Euripides, Alcestis.

Latin.—Virgil, Georgics, Bk. I.; Horace, Odes, Bk. I; Livy Bk. XXII.

EXEMPTIONS FROM TUITION FEES UNDER PRESENTATION SCHOLARSHIPS, ETC.

Four exemptions from tuition fees may be granted by the Board of Governors from time to time, to the most successful students who may present themselves as Candidates. By order of the Board, one of these is given annually to the Dux of the High School of Montreal, and one to the Dux of any other Academy or High School, sending up in one year for entrance, three or more Candidates competent to pass creditably the Matriculation Examination.

In the event of any Academy or High School in the Province of Quebec offering for competition among its pupils an Annual Bursary in the Faculty of Arts of not less than $80, the Governors will add the amount of the fees of tuition thereto.

For exemptions from fees to Normal School Students, see regulations of Normal School.

One exemption is given annually to the pupil (boy or girl) of the Montreal High School holding a Commissioners' exemption from the Schools of the Protestant Commissioners, Montreal, who has taken the highest marks at the A. A. Examination, and is recommended by the Commissioners.

---

§ III. COURSE OF STUDY.

An Undergraduate, in order to attain the degree of B.A., is required, after passing the First Year Matriculation Examination (see § I.), to attend the appointed courses of lectures regularly for four years, and to pass two Examinations in each year, viz., at Christmas and in April. If he fail at any one of these examinations, he is not allowed to proceed with his course until he has passed it subsequently. (See § IV.) Undergraduates are arranged, according to their standing, as of the First, Second, Third or Fourth Year.

The special arrangements made for Honour Students and for those attending lectures in other Faculties also are stated in § V.

ORDINARY COURSE FOR THE DEGREE OF B.A.

FIRST YEAR.

GREEK.—HOMER.—Odyssey, Bk. XI. Xenophon.—Hellenics, Book I. Studies in History and Literature.

LATIN.—CICERO, De Amicitia. Sallust, Catiline. VIRGIL, Aeneid, Bk. VI.—Translation at sight.—Studies in History and Literature.—Latin Prose Composition.

MATHEMATICS.—Arithmetic, Euclid, six books. Algebra, to end of Quadratic equations. Plane Trigonometry, in part.

ENGLISH LITERATURE.—Two lectures a week.

The course will present an outline of English Literature from the Anglo-Saxon period to the present day.

CHEMISTRY.—Lectures chiefly on Elementary and Inorganic Chemistry, with experiments in the class-room, and Laboratory work if desired; the whole preparatory to the Course in Natural Science.

[A student registered in the Medical Faculty may substitute for this one-half of the Course in Chemistry required of Students in the first year of the Medical Faculty. For conditions see § V.]

FRENCH.—DAREY, Principes de Grammaire française.—LA FONTAINE, Choix de Fables.—MOLIÈRE, L'Avare.—Dictation, Colloquial exercises.

Or, instead of French, either of the following:—

GERMAN.—VANDERSMISSEN AND FRASER'S German Grammar; JOYNES' German Reader; Dictation; Colloquial exercises.

HEBREW.—(For Theological Students only.)—*Elementary Course.*—Reading and Grammar, with oral and written exercises in Orthography and Etymology. Translation and Grammatical Analysis of Genesis.—*Text-Books.*—HARPER'S Elements of Hebrew; and Introductory Hebrew Method and Manual.

SECOND YEAR.

GREEK.—PLATO.—Apology. Aeschylus.—Prometheus Vinctus. History of Greece.

LATIN.—HORACE.—Epistles, Bk. I., 1 to 7; Livy, Bk. XXI. Translation at sight, and Latin Prose Composition.

MATHEMATICS.—Arithmetic, Euclid. Algebra and Trigonometry as before.—Logarithms.—Plane Trigonometry, including solution of triangles and applications.

MATHEMATICAL PHYSICS.—Mechanics, one lecture a week.

PSYCHOLOGY AND LOGIC.—First Term.—Elementary Psychology (*Text-Book.*—MURRAY'S Handbook of Psychology, Bk. I.). Second Term.—Logic (*Text-Book.*—JEVONS' Elementary Lessons in Logic).

[Students registered in the Medical Faculty may substitute the second half of the Course in Chemistry in that Faculty for the Psychology of the First Term and the Mathematical Physics of the Second Year. For conditions see § V.]

BOTANY.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology. *Text-Books.*—Gray's Structural Botany. Penhallow's Classification. Penhallow's Guide to the Collection of Plants. Gray's Manual. [Students registered in the Medical Faculty may subsitute the Botany course in that Faculty for the above.] For conditions see § V.

FRENCH.—RACINE, Esther.—Ronsard, l'Honneur et l'Argent.—CONTANSEAU, Précis de Littérature française depuis son origine jusqu'à la fin du XVIIe siècle. Translation into French :—DR. JOHNSON, Rasselas. Dictation. Parsing. Colloquial exercises.

Or, instead of French, either of the following :—

GERMAN.—VANDERSMISSEN AND FRASER'S German Grammar; Joynes' German Reader; Freytag—Die Journalisten; Uhland—Ballads and Romances (MacMilan's Foreign School Classics); Translation at sight; Dictation Colloquial exercises; Parsing.

HEBREW.—(For Theological Sudents only.)—*Intermediate Course.*—Grammar. —Dr. Harper's "Elements" and "Methods."—Translation from the Old Testament.—Exercises:—Hebrew into English, and English into Hebrew.—Syntax.—Reading of the Masoretic notes.

EUROPEAN HISTORY.—The Political History of Europe from 1789 to the present day.

[For the Intermediate Examination, see § IV.]

THIRD YEAR.

GREEK.—LYSIAS.—Contra Eratosthenem.

EURIPIDES.—Medea.

Or, instead of Greek :—

LATIN.—JUVENAL.—Satires (Selections).

PLINY.—Select letters.

Latin Prose Composition.

NATURAL PHILOSOPHY.—MATHEMATICAL PHYSICS.—GALBRAITH AND HAUGHTON'S Mechanics, viz., *Statics*, First three chapters, omitting sec. 5, chapter I., and sec. 21, chapter II.; *Dynamics*, subjects of the first five chapters. Maxwell's Matter and Motion (parts). GALBRAITH AND HAUGHTON'S Hydrostatics.

In addition to the above, the Student must take three subjects out of the two following divisions, headed Literature and Science respectively, the selection being at the option of the Student, provided two be taken from one division and one from the other.

I. Literature, etc.

LATIN OR GREEK.—As above, according as Greek or Latin has been chosen previously.

ENGLISH AND RHETORIC.—(A) CHAUCER'S Prdogue to Canterbury Tales, ed. Morris. (B) Genung's Rhetoric.

MENTAL PHILOSOPHY.—First Term :—The Logic of Induction, as in MILL'S System of Logic, Book III. Second Term :—The Psychology of Cognition, as in MURRAY'S Handbook of Psychology, Book II., Part I.

FRENCH.—(If taken in the first two years).—COINEILLE, Le Polyeucte—Cogery —Third French course. Translation into French—Johnson, Rasselas. French Composition. Dictation.—CONTANSEAU, Précis de Littérature française, depuis le XVIIe siècle jusqu'à nos jours.

GERMAN.—(If taken in the first two years).—VANDERSMISSEN AND FRASER'S German Grammar ; SCHILLER—Siege of Antwerp ; LESSING—Minna von Barnhelm ; History of German Literature ; German composition & Dictation.

HEBREW.—(For Theological Students).—*Advanced Course.*—Gesenius' Grammar —Harper's Elements of Syntax. Exercises continued.—Translation from the Old Testament.—Reading of the Masoretic notes.

II. Science.

†OPTICS AND DESCRIPTIVE ASTRONOMY.—Optics (Galbraith and Haughton). Descriptive Astronomy (Lockyer's Elementary Astronomy), English edition ; first five chapters. Students are recommended to use with this an "Easy Guide to the Constellations," by Gall.

†EXPERIMENTAL PHYSICS.—Heat, Light and Sound ; as in Ganot's Treatise.

LABORATORY COURSE IN PHYSICS (See Lecture courses.)

ZOOLOGY.—Elementary Physiology, Embryology, Morphology, development, classification and natural history of vertebrate and invertebrate forms ; weekly demonstrations. Practical Course in Fourth Year.

PHYSIOLOGY AND HISTOLOGY, with practical work therein, or ANATOMY and PRACTICAL ANATOMY, will, for Medical Students, be accepted as two courses under this heading. For conditions see § V.

FOURTH YEAR.

GREEK.—DEMOSTHENES.—The Olynthiacs.

Or, instead of Greek:—

LATIN.—TACITUS.—Annals, Book II.
Latin Prose Composition.

NATURAL PHILOSOPHY.—*Mathematical Physics.* Mechanics and Hydrostatics (as in Third Year), or Astronomy (GALBRAITH AND HAUGHTON OR BRINKLEY) and Optics (GALBRAITH AND HAUGHTON).

MORAL PHILOSOPHY.—First Term :—The Psychological Basis of Ethics. Second Term :—Ethics Proper, comprising the elementary principles of Jurisprudence and Political Science. *Text Book* :—Murray's Introduction to Ethics.

In addition to the preceding, the Student must take three subjects out of the two following divisions (headed Literature and Science respectively), the selection being at the option of the Student, provided all three are not taken out of the same division.

I. Literature, etc.

LATIN OR GREEK.—As above, according as Greek or Latin has been taken above.

ENGLISH LITERATURE.—(*a*) The leading poets of the nineteenth century.—One lecture a week. (*b*) In addition to (*a*) Students will be examined on characteristic poems of the authors treated. The time to be given to (*b*) may be regarded as equal to that required to obtain a good knowledge of (*a*).

FRENCH.—(If taken in Third Year.)—Bonnefon, Les Ecrivains modernes de la France. Translation into French. Morley's Ideal Commonwealths. Dictation. CORNEILLE, Le Polyeucte.

GERMAN.—(If taken in Third Year.)—Gœthe—Aus meinem Leben; SCHILLER—Wallenstein; German Grammar and Composition; Dictation; History of German Literature.

HEBREW.—(For Theological Students.)—Advanced Course continued.

II. Science.

†ASTRONOMY AND OPTICS.—If not chosen as above.

†EXPERIMENTAL PHYSICS.—Electricity and Magnetism, as in GANOT'S Treatise.

LABORATORY COURSE IN PHYSICS.—(See lecture courses.)

MINERALOGY AND GEOLOGY.—1. *Mineralogy and Petrography.* Minerals and rocks, especially those important in Geology or useful in the Arts. 2. *Stratigraphy, Chronological Geology and Palæontology.*—Data for determining the relative ages of Formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America. *Text-Book.*—Dawson's Handbook of Canadian Geology.

For the B.A. Examinations see § IV.

---

† Students claiming exemptions (see § V.) cannot count these subjects for the B.A. if they have not taken the Third Year Mathematical Physics.

NOTE ON THE ORDINARY COURSE FOR B.A.

Instead of two distinct subjects in one of the above divisions in either Third or Fourth Year, the student may select one subject only, together with an *Additional Course* in the same or any other of his subjects in which such Additional Course may have been provided by the Faculty, under the above rules, provided he has been placed in the first class in the corresponding subject at the preceding Sessional Examination (viz., Intermediate or Third Year, according to standing).

The Additional Course is intended to be more than an equivalent in the amount of work involved for any of the other subjects in the division.

(For details of additional courses provided, see under Section XIII.)

Undergraduates are required to study either French or German for two years (viz., in the First and Second Years), taking the same language in each year. Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take an additional Session in the language in which he has failed. In addition to the obligatory, there are other lectures, attendance on which is optional.

Students who intend to join any Theological School, on giving written notice to this effect at the beginning of the First Year, may take Hebrew instead of French or German.

For arrangements enabling Students in Medicine or Applied Science to take the course in Arts also and obtain B.A., with B. Ap. Sc. or M.D., in six years, see § V.

Undergraduates who have been previously Partial Students, and have in this capacity attended a particular Course or Courses of Lectures, may, at the discretion of the Faculty, be exempted from further attendance on these Lectures, but no distinction shall in consequence be made between the Examination of such Undergraduates and of those regularly attending Lectures.

HONOUR COURSES.

Third and Fourth Years.

1. CLASSICAL LANGUAGES AND LITERATURE.
2. MATHEMATICS AND PHYSICS.
3. MENTAL AND MORAL PHILOSOPHY.
4. ENGLISH LANGUAGE, LITERATURE AND HISTORY.
5. GEOLOGY AND OTHER NATURAL SCIENCES.
6. MODERN LANGUAGES WITH HISTORY.
7. SEMITIC LANGUAGES.

Honours are given in Mathematics in the First and Second Years also.

Candidates for Honours are allowed exemptions under conditions stated in § V.

§ IV. EXAMINATIONS.

(A) COLLEGE EXAMINATIONS.

For Students of McGill College only.

1. There are two examinations in each year—one at Christmas and the other at the end of the Session. In each of these the Students who pass are arranged according to their answering as 1st Class, 2nd Class and 3rd Class.

In the Fourth Year only, the University Examination for B.A. takes the place of the Sessional Examinations.

2. Students who fail in any subject at the Christmas Examinations are required to pass a Supplemental Examination (if permission be obtained from the Faculty) on that subject before admission to the Sessional Examinations.

3. Undergraduates who fail in one subject at the Sessional Examinations of the first two years are required to pass a Supplemental Examination in it. Should they fail in this, they will be required in the following Session to attend the Lectures and pass the Examination in the subject in which they have failed, in addition to those of the Ordinary Course, or to pass the Examination alone without attending lectures, at the discretion of the Faculty.

4. Failure in two or more subjects at the Sessional Examinations of the first two years, or in one subject at the third year Sessional Examinations, involves the loss of the Session. The Faculty may permit the student to recover his standing by passing a Supplemental Examination at the beginning of the ensuing Session. For the purpose of this Regulation, Classics and Mathematics are each regarded as two subjects.

5. A list of those to whom the Faculty may grant Supplemental Examinations will be published after the examination. The time for the Supplemental Examination will be fixed by the Faculty; the examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

(B) UNIVERSITY EXAMINATIONS.

For Students of McGill College and of Colleges affiliated in Arts.

1. FOR THE DEGREE OF B.A.

There are three University Examinations: The *Matriculation*, at entrance; the *Intermediate*, at the end of the Second Year; and the *Final*, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated in Section I.

2. In the Intermediate Examination, the subjects are Classics and Pure Mathematics, Logic, and the English Language, with one other Modern Language, or Botany. Theological Students are allowed to take Hebrew instead of a Modern Language. The subjects for the examination of 1896 are as follows :—

Classics.—Greek.—Plato, Apology; Aeschylus, Prometheus Vinctus. Latin—Horace, Epistles, Bk. I., 1 to 7.—Livy, Bk. XXI. Latin Prose Composition, and Translation at sight of Latin into English.

Mathematics.—Arithmetic.

Euclid, Books I., II., III., IV., VI., and defs. of Book V.
Algebra, to Quadratic Equations inclusive (as in Colenso).
Trigonometry, including use of Logarithms.

Logic.—Jevons' Elementary Lessons in Logic.

English.—(For affiliated colleges).—Spalding's History of English Literature, or Lectures (see course). A paper on the essentials of English History (Buckley). Essay on a subject to be given at the time of the Examination.

With one of the following :—

European History.—(For McGill College Students) as on p. 54.

1. *Botany.*—Structural and Systematic Botany, as in Gray's Text-Book, with descriptive analysis of plants.

2. *French.*—Ponsard :—l'Honneur et L'Argent. Racine :—Esther. Contanseau :—Précis de la Littérature française from the beginning to the XVIIIth century. Translation into French :—Rasselas. Grammatical questions.

3. *German.*—Vandersmissen & Fraser's German Grammar; Joynes' German Reader; Freytag—Die Journalisten; Uhland—Ballads and Romances (Macmillan's Foreign School Classics); Translation at sight; Dictation; Colloquial exercises.

4. *Hebrew.*—Genesis—chap. III. to VIII. Exodus—chap. XX. Exercises: Hebrew into English, and English into Hebrew. Syntax. Reading of the Masoretic notes, the Septuagint version and the Vulgate.

3. For the Final or B.A. Ordinary Examination the subjects are those appointed as obligatory in the Third and Fourth Years, viz., Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics), or Astronomy and Optics; Moral Philosophy; and those three subjects which the Candidate may have selected for himself in the Third and Fourth Years. (See § III.)

The subjects in detail for 1896 are as follows :—

1. *Greek.*—Demosthenes, The Olynthiacs; Euripides, Medea.

(Or Latin, as follows) :—

2. *Latin.*—Tacitus, Annals, Book II.; Juvenal, Satt. VIII. and XIII.

Mathematical Physics.

1. Mechanics and Hydrostatics, as in Galbraith & Haughton's text-books, with parts of Maxwell's "Matter and Motion"; or *Optics and Astronomy.

Mental and Moral Philosophy.

Murray's Introduction to Ethics.
*Additional Courses as in § XIII.

Natural Science.

Mineralogy and Geology, as in Dana's Manual and Dawson's Handbook of Canadian Geology.
*Practical Geology and Palæontology; or Practical Chemistry, as in § XIII.

Experimental Physics.

Electricity and Magnetism. (See courses of Lectures § XIII.)

History. (For affiliated Colleges.)

Myers :—Mediæval and Modern History; Bryce's Holy Roman Empire (omit Chaps. 6, 8, 9, 13, and Supplementary Chapter).
*Additional Course as in § XII.
English Literature (for McGill Students), as on p. 35.

French.

The Course of French for the Fourth Year.
*The subjects of the Additional Course as in § XIII.

German.

The Course of German for the Fourth Year.
*Additional Course as in § XIII.

Hebrew (Theological Students).

Isaiah, Chap. VI. to X.; Daniel, Chap. VIII. to XII.; Psalms XXXVI to XL. Translation at sight.
Gesenius' Grammar; Harper's Elements of Syntax; Reading of the Masoretic notes, the Septuagint Version and the Vulgate.
Additional Courses (see § XIII).

For details of each subject, see Courses of Lectures, § XIII.

At the B.A. Ordinary Examination, of the Candidates who obtain the required aggregate marks, only those who pass in the First Class in three of the departments, and not less than Second Class in the remainder, shall be entitled to be placed in the First Class for the Ordinary Degree.

4. Every Candidate for the Degree of B.A. is required to make and sign the following declaration :—

"Ego———polliceor sancteque recipio me, pro meis viribus studiosum fore communis hujus Universitatis boni, et operam daturum ut ejus decus et dignitatem promoveam."

II. FOR THE DEGREE OF M.A.

1. A Candidate must be a Bachelor of Arts of at least three years standing.

Thesis.

2. He is required to prepare and submit to the Faculty a thesis on some literary or scientific subject, under the following rules :—

(*a*) The subject of the thesis must be submitted to the Faculty before the thesis is presented.

(*b*) A paper read previously to any association, or published in any way, cannot be accepted as a thesis.

(*c*) The thesis submitted becomes the property of the University, and cannot be published without the consent of the Faculty of Arts.

(*d*) The thesis must be submitted before some date to be fixed annually by the Faculty, not less than two months before proceeding to the Degree.

The last day in the session of 1895-96 *for sending in Theses for M.A. will be Jan.* 31*st,* 1896.

Examination.

3. All Candidates, except those who have taken First or Second Rank B.A. Honours, or have passed First Class in the Ordinary Examinations for the Degree of B.A., are required to pass an examination also, either in Literature or in Science, as each Candidate may select.

(*a*) The subjects of the Examination in *Literature* are divided into two groups as follows :—

Group A.—1. Latin. 2. Greek. 3. Hebrew,

Group B.—1. French. 2. German. 3. English.

(*b*) The subjects for the Examination in *Science* are divided into three groups :—

Group A.—Pure Mathematics (Advanced or Ordinary). 2. Mechanics (including Hydrostatics). 3. Astronomy. 4. Optics.

Group B.—1. Geology and Mineralogy. 2. Botany. 3. Zoology. 4. Chemistry.

Group C.—1. Mental Philosophy. 2. Moral Philosophy. 3. Logic. 4. History of Philosophy.

(*c*) Every candidate in Literature is required to select two subjects out of one group in the literary section, and one out of the other group in the same section for the Examination. Every Candidate in Science is required to select two out of the three groups in the Scientific section ; and in one of the groups so chosen to select two subjects, and in the other group one subject for Examination.

(*d*) One of the subjects selected as above will be considered the principal subject (being so denoted by the candidate at the time of application), and the other two as subordinate subjects.

(*e*) The whole examination may be taken in one year, or distributed over two or three years, provided the examination in any one subject is not divided.

For further details of the examination, application must be made to the Faculty before the above date. For fees, see § XII. (In case of failure, the candidate may present himself in a subsequent year without further payment of fees.)

Lectures to Bachelors of Arts.

Lectures are open to Bachelors of Arts who are candidates for M.A., the sessional examinations corresponding to these lectures being reckoned as parts of the M.A. examination. The subjects are Greek, Latin, English, Mental and Moral Philosophy, Chemistry, Botany, Geology and Mineralogy, French, German.

III. FOR THE DEGREE OF LL.D.

This Degree is intended as an incentive to and recognition of special study by Masters of Arts in some branch of Literature or Science. The thesis or short

printed treatise referred to below is regarded as the chief test of the candidate's mastery of the subject he has chosen and of his power of handling it. A very wide range of choice is allowed in order to suit individual tastes.

The following are the regulations :—

I. Candidates must be Masters of Arts of at least twelve years standing. Every candidate for the Degree of LL.D. in course is required to prepare and submit to the Faculty of Arts, not less than three months before proceeding to the degree, twenty-five printed copies of a thesis on some Literary or Scientific *subject previously approved* by the Faculty, and possessing such a degree of Literary or Scientific merit, and evidencing such originality of thought or extent of research as shall, in the opinion of the Faculty, justify it in recommending him for that degree.

N.B.—The subject should be submitted before the Thesis is written.

II. Every Candidate for the Degree of LL.D. in Course is required to submit to the Faculty of Arts, with his thesis, a list of books treating of some one branch of Literature or of Science, satisfactory to the Faculty, in which he is prepared to submit to examination, and on which he shall be examined, unless otherwise ordered by vote of the Faculty. For fees, see § XII.

---

§ V. SPECIAL PROVISIONS FOR CANDIDATES FOR HONOURS AND FOR PROFESSIONAL STUDENTS.

The Honour lectures are open to Undergraduates only, and no Undergraduate is permitted to attend unless (*a*) he has been placed in the First Class in the subject at the preceding Sessional Examination, if there be one, and has (*b*) satisfied the Professor that he is otherwise qualified. (*c*) While attending lectures his progress must be satisfactory to the Professor; if not satisfactory, he may be notified by the Faculty to discontinue attendance.

I. Candidates for Honours in the Second Year.

Candidates for Honours in the Second Year who have obtained Honours in the First Year may omit the lectures and examinations either in Modern Languages (or Hebrew) or Botany, giving notice of the subject at the beginning of the session.

II. Candidates for Honours in the Third Year.

Every Candidate for Honours in the Third Year must, in order to obtain exemptions, have passed the Intermediate Examination, and must in the Examin-

ations of the Second Year have taken First Rank Honours, if Honours be offered in the subjects, or if not, First Class at the Ordinary Sessional Examinations in the subject in which he proposes to compete for Honours, and be higher than Third Class in the majority of the remaining subjects ; such Candidates shall be entitled in the Third Year to exemption from lectures and examinations in any one of the subjects required by the general rule (see § III.) except that in which he is a Candidate for Honours. A Candidate for Honours in the Third Year who has failed to obtain Honours shall be required to take the same examinations for B.A. as the ordinary Undergraduates.

III. Candidates for B.A. Honours.

A Student who has taken Honours of the first rank in the Third Year, and desires to be Candidate for B.A. Honours, shall be required to attend two only of the courses of lectures given in the ordinary departments, and to pass the two corresponding examinations only at the ordinary B.A. Examination. Candidates, however, who at the B.A. Examinations obtain Third Rank Honours, will not be allowed credit for these exemptions at the end of the Session, unless the Examiners certify that the knowledge shown of the whole Honour Course (Part II. as well as Part I.) is sufficient to justify it. A Student who has taken Second Rank Honours in the Third Year, and desires to be a candidate for B.A. Honours in the same subject, shall be allowed to continue in the Fourth Year the study of the same departments that he has taken in the Third Year, but shall be required to take the same number of subjects as in the Ordinary Course.

NOTE.—For subjects of Ordinary Course see § III.

IV. Professional Students.

Students of the Third and Fourth Years, matriculated in the Faculties of Law, or Medicine, or Applied Science or in any affiliated Theological College, are entitled to exemption from any one of the Ordinary subjects required in the Third and Fourth Years. (For rule concerning "Special Certificates," see § IV.)

To be allowed these privileges in either year, they must give notice at the commencement of the session to the Dean of the Faculty of Arts of their intention to claim exemptions as Professional Students, and must produce at the end of the session certificates of attendance on a full course of Professional Lectures during the year for which the exemption is claimed.

Students registered in the Faculty of Medicine are allowed the following additional privileges:—

In the First and Second Years in Arts, they may substitute certain equivalents for parts of the Ordinary Course. (See § III.)

In the Third Year in Arts, they may, if following the full course of the First Year in Medicine, take Physiology and Histology with practical work therein, or Anatomy and Practical Anatomy, as two of the courses under the heading of Science in the Ordinary Course.

Medical Students who have completed the Third Year in Arts and First Year in Medicine are required in the Fourth Year in Arts to take two only of the sub-

jects of the Ordinary Course (or one subject with the Additional Course therein). These subjects must be either in Languages or Literature. Medical Students are recommended to continue in the Third and Fourth Years of the Arts Course subjects they have taken in the First and Second Years.

To be allowed these privileges, certificates of registration in the Medical Faculty must be presented at the beginning of each year to the Dean of the Faculty of Arts; and at the end of each session in the first two years, certificates of attendance on lectures and of passing the corresponding examinations. At the end of the Third and Fourth Years, certificates must be presented to show that the full curriculum of the Medical Faculty for the year has been completed.

Students in the Faculty of Applied Science, who have passed the first two years in Arts, are allowed, while pursuing the course in Applied Science, to substitute certain courses in Applied Science for the corresponding courses in Arts and to distribute the work of the Third and Fourth Years in Arts over three years, so that they may be enabled to take the B.A. Degree at the end of the Fifth Year from entrance. For the details, application may be made to the Dean of the Faculty of Arts. Certificates of attendance, etc., in Applied Science will be required.

The above arrangements will enable candidates for the M.D. or B. Ap. Sc degrees to pursue the course in Arts also, leading to the B.A. degree, and complete both courses in six years.

Literate in Arts.—A certificate of "*Literate in Arts*" will be given along with the professional degree in Medicine or Applied Science to those who have completed two years study in the Faculty of Arts, and have passed the prescribed examinations.

V. Students of the University attending Affiliated Theological Colleges.

1. These students are subject to the regulations of the Faculty of Arts in the same manner as other students.

2. The Faculty will make formal reports to the Governing body of the Theological College which any such students may attend, as to:—(1) their conduct and attendance on the classes of the Faculty; and (2) their standing in the several examinations; such reports to be furnished after the Christmas and Sessional Examinations severally, if called for.

3. Undergraduates are allowed no exemptions in the course for the Degree of B.A. until they have passed the Intermediate Examination; but they may take Hebrew in the First or Second Years, instead of French or German.

4. In the Third and Fourth Years they are allowed exemptions, as stated above.

* Any student who, under any of the above rules, desires to take Experimental Physics is required to take Mechanics and Hydrostatics also, in the Third Year.

§ VI. MEDALS, HONOURS, PRIZES AND CLASSING.

1. Gold Medals will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the First Rank

in the subjects stated below, and who shall have passed creditably the Ordinary Examinations for the Degree of B.A., provided they have been recommended therefor to the Corporation by the Faculty on the report of the Examiners :—

The *Henry Chapman Gold Medal*, for Classical Languages and Literature.
The *Prince of Wales Gold Medal*, for Mental and Moral Philosophy.
The *Anne Molson Gold Medal*, for Mathematics and Natural Philosophy.
The *Shakespere Gold Medal*, for the English Language, Literature and History.

The *Logan Gold Medal*, for Geology and other Natural Sciences.
Major Hiram Mills Gold Medal, for a subject to be chosen by the Faculty from year to year.

If there be no candidate for any Medal, or if none of the candidates fulfil the required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subject for which the Medal was intended. For details, see announcements of the several subjects below.

2. HONOURS of First, Second or Third Rank will be awarded to those Undergraduates who have successfully passed the Examinations in any Honour Course established by the Faculty, and have also passed creditably the ordinary Examinations in all the subjects proper to their year.

The Honour Examinations are each divided into two parts, separated by an interval of a few days, under the following regulations :—

(*a*) No Candidate will be admitted to Part II., unless he has shown a thorough and accurate knowledge of the course appointed for Part I.

(*b*) The names of the successful Candidates in Part I. will be announced before Part II. begins.

(*c*) First or Second Rank Honours will be awarded to those Candidates only who are successful in Part II.

(*d*) Third Rank Honours will be awarded to those who are successful in Part I. alone.

By an Order of the Lieutenant-Governor of Ontario in Council, Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for first-class Certificates for Grades "A and B."

3. SPECIAL CERTIFICATES will be given to those Candidates for B.A. who shall have been placed in the First Class at the ordinary B.A. Examination; have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year ; are in the First Class in not less than half the subjects, and have no Third Class. At this examination, no Candidate who has taken exemptions (see § V.) can be placed in the first-class unless he has obtained First Class in four of the departments in which he has been examined ; he must have no Third Class.

4. CERTIFICATES of High General Standing will be granted to those Undergraduates of the first two years who have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year, are in the First Class in not less than half the subjects, and have not more than one Third Class. In the Third Year the conditions are the same as for the Special Certificate for B.A.

5. PRIZES OR CERTIFICATES will be given to those Undergraduates who may have distinguished themselves in the studies of a particular class and have attended all the other classes proper to their year.

6. His Excellency the Earl of Aberdeen has been pleased to offer a GOLD MEDAL for the study of Modern Languages and Literature, with History, or for First Rank General Standing, as may be announced.

(*a*) The Regulations for the former are as follows :—

(1) The subjects for competition shall be French and German, together with a portion of the History prescribed for the present Honour Course for the Shakspeare Medal. Information concerning the History may be obtained from the Lecturer on History.

(2) The Course of Study shall extend over two years, viz., the Third and Fourth Years.

(3) The successful Candidate must be capable of speaking and writing both languages correctly.

(4) There shall be examinations in the subjects of the course in both the Third and Fourth Years, at which Honours may be awarded to deserving Candidates.

(5) The general conditions of competition and the privileges as regards exemptions shall be the same as for the other Gold Medals in the Faculty of Arts.

(6) Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

(7) Candidates desiring to enter on the Third Year of the Course, who have not obtained first-class standing at the Intermediate or Sessional Examinations of

the Second Year in Arts, are required to pass an examination in the work of the first two years of the Course in Modern Languages, if called on to do so by the Professors.

8. The subjects of Examination shall be those of the Honour Course in Modern Languages.

(*b*) The Regulations for the Gold Medal, if awarded for First Rank General Standing, are as follows :—

(1) The successful Candidate must take no exemptions or substitutions of any kind, whether Professional or Honour, in the Ordinary B.A. Examinations.

(2) He shall be examined in the following subjects : —

(*a*) *Classics* (both languages) ; (*b*) *Mixed Mathematics* :—*Mechanics*, *Hydrostatics*, *Optics*, *Astronomy* ; (*c*) *Moral Pilosophy* ; and any *two* of the following subjects, or any *one* of them with its Additional Course ; (*d*) Natural Science ; (*e*) Experimental Physics ; (*f*) English and History ; (*g*) French ; (*h*) German.

(3) His answering must satisfy special conditions laid down by the Faculty.

(4) The same Candidate cannot obtain the Gold Medal for First Rank General Standing and also a Gold Medal for First Rank Honours.

7. THE NEIL STEWART PRIZE of $18 is open to all Undergraduates of this, and also to Graduates of this or any other University, studying Theology in any College affiliated to this University under the following rules :—

(1) The prize will not be given for less than a thorough examination on Hebrew Grammar passed in the First Class, in reading and translating the Pentateuch, and such poetic portions of the Scriptures as may be determined.

(2) In case competitors should fail to attain the above standard, the prize will be withheld, and a prize of $36 will be offered in the following year for the same.

[Course for the present year :—Hebrew Grammar (Gesenius) ; Translation and analysis of Exodus ; Isaiah XL. to the end of the book.]

(3) There will be two Examinations of three hours each—one in Grammar and the other in Translation and Analysis.

This Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, was re-established by the liberality of the late Neil Stewart, Esq., of Vankleek Hill.

8. EARLY ENGLISH TEXT SOCIETY'S PRIZE.—This prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon, (2) Early English before Chaucer.

The subjects of Exmination will be :—

(1) The Lectures of the Third and Fourth Years on Anglo-Saxon.

(2) Specimens of Early English, Clarendon Press Series, ed. Morris and Skeat, Part II., A. D. 1298—A. D. 1393. The Lay of Havelock the Dane (Early English Text Society, ed. Skeat).

9. New Shakspere Society's Prize.—This Prize, the annual gift of the New Shakspere Society, open to Graduates and Undergraduates, will be awarded for a critical knowledge of the following plays of Shakspere :—

Hamlet ; Macbeth ; Othello ; King Lear.

10 "Charles G. Coster Memorial Prize."—This Prize, intended as a tribute to the memory of the late Rev. Chas. G. Coster, M.A., Ph.D., Principal of the Grammar School, St. John, N.B., is offered by Colin H. Livingstone, Esq., B.A., to the Undergraduates (men or women) from the Maritime Provinces, Nova Scotia, New Brunswick and Prince Edward Island. In April, 1896, it will be awarded to that Undergraduate of the First, Second or Third Year, from the above Provinces, who, in the opinion of the Faculty, has passed the most satisfactory Sessional Examinations, under certain conditions laid down by the donor.

11. Science Scholarships Granted by Her Majesty's Commission for the Exhibition of 1851.—These scholarships of £150 sterling a year in value are tenable for two or, in rare instances, three years. They are limited, according to the Report of the Commission, "to those branches of Science (such as Physics, Mechanics and Chemistry) the extension of which is specially important for our national industries." Their object is, not to facilitate ordinary collegiate studies, but "to enable students to continue the prosecution of science with the view of aiding in its advance or in its application to the industries of the country."

Two nominations to these scholarships have already been placed by the Commissioners in 1891 and 1893 at the disposal of McGill University, and have been awarded. A third is offered for 1895.

When nominations are offered, they are open to Students of not less than three years standing in the Faculties of Arts or Applied Science, and are tenable at any University or at any other Institution approved by the Commission.

12. The names of those who have taken Honours, Certificates or Prizes will be published in order of merit, with mention, in the case of Students of the First and Second Years, of the schools in which their preliminary education has been received.

§ VII. BOARDING HOUSES.

Board and rooms can be obtained at a cost of from $15 to $25 per month : Rooms only, from $4 to $10 per month : Board only, from $12 to $18 per month.

Students can obtain a list of Boarding Houses on application to the Secretary.

---

§ VIII. ATTENDANCE AND CONDUCT.

All Students shall be subject to the following regulations for attendance and conduct :—

1. A Class-book shall be kept by each Professor or Lecturer, in which the presence or absence of Students shall be carefully noted ; and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll immediately at the beginning of the lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention or neglect of study, or disorderly conduct in the class-room. In the case last mentioned, the student may, at the discretion of the Professor, be required to leave the class-room. Persistence in any of the above offences against discipline, after admonition by the Professor, shall be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a session shall in each case be determined by the Faculty.

4. While in the College, or going to or from it, students are expected to conduct themselves in the same orderly manner as in the class-rooms. Any Professor observing improper conduct in the College buildings or grounds may admonish the student, and, if necessary, report him to the Dean.

5. Every student is required to attend regularly the religious services of the denomination to which he belongs, and to maintain, without as well as within the walls of the College, a good moral character.

6. When students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

7. Any student who does not report his residence on or before November 1st in each year is liable to a fine of one dollar.

8. Any student injuring the furniture or buildings will be required to repair he same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may see fit to inflict.

9. All cases of discipline involving the interests of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or, in his absence, to the Vice-Principal.

[NOTE.—All Students are required to appear in Academic dress while in or about the College buildings. Students are requested to take notice that petitions to the Faculty on any subject cannot, in general, be taken into consideration, except at the regular meetings appointed in the Calendar.]

§ IX. LIBRARY.

Librarian :—C. H. GOULD, B.A.

Assistant Librarian :—H. MOTT.

The facilities offered by the library have been greatly increased during the last year by the beautiful and commodious building erected for it, and presented to the University by the late Mr. Peter Redpath. It contains about 35,000 volumes. On the shelves in the reading-room is a selection of those books most frequently required for reference in the various courses of study, as well as of other standard works, and of dictionaries, encyclopaedias, etc. All of the books referred to may be freely used in the reading room, but may not, as a rule, be withdrawn from the library during library hours.

[Special collections of works, numbering in all about 6500 volumes, are placed in the Physics Building, the Engineering Building, and the rooms of the Law Faculty. The Medical Faculty has a library of its own containing about 14,500 volumes. The total number of bound volumes belonging to the University is thus about 56,000 volumes.]

Extracts from the Regulations.

1. During the College Session the Library is open daily (except Sundays and general public holidays), from 9 a.m. till 5 p.m. ; and the Reading Rooms from 9 a.m. till 6 p.m., and also from 8 till 10 p.m. On Saturdays, both Library and Reading Rooms close at 5 p.m. During vacations, both Library and Reading Rooms close at 5 p.m., and on Saturdays at 1 p.m.

2. The Stack room is not open to Students or to the public.

3. The books in the Library are classed in two divisions :—1st, Those which may be lent ; and 2nd, those which may not, under any circumstances, be removed from the Library. The classification shall be determined by the Librarian.

4. (*a*) Students in the Faculties of Arts or of Applied Science, who have paid the Library fee, may borrow books on depositing the sum of $5 with the Bursar, which deposit, after the deduction of any fines due, will be repaid at the end of the session on the certificate of the Librarian that the books have been returned uninjured.

4. (*b*) Students in the Faculties of Law, Medicine, or Comparative Medicine, who have paid the Library fee to the Bursar, may read in the Library, and, on depositing the sum of $5 with the Bursar, may borrow books on the same conditions as Students in Arts. They are required to present their Matriculation Tickets to the Bursar and to the Librarian.

4. (*c*) Graduates in any of the Faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as Students; but they are not required to pay the annual Library fee.

4. (*d*) Members of the McGill College Book Club, on presenting annually a certificate of their membership, are by special regulation of Corporation entitled to the use of Library on the same conditions as Graduates, but they are not required to make a deposit.

4. (*e*) Strangers presenting satisfactory introductions to the Librarian may be allowed, at his discretion, the full use of the Library, until the next Meeting of the Library Committee.

4. (*f*) Persons, whether members of the University or not, may, at the discretion of the Library Committee, be allowed the use of the Library, on payment of an annual fee of $10.

5. Borrowers, not being Professors or Lecturers, are entitled to take out books (subject to the regulations), to the number of three volumes at one time; Professors and Lecturers, to the number of twenty volumes at one time.

6. No borrower other than a Professor or Lecturer may keep any book belonging to the Library longer than two weeks, on penalty of a fine of 5cts a volume for each day of detention, but any borrower may renew the loan of a book for fitting reasons. A borrower incurring fines beyond the sum total of $1 shall be debarred the use of the Library until they have been paid.

10. Before leaving the Library, readers must return the books they have obtained, to the attendant at the Delivery Desk.

All persons using books remain responsible for them, so long as the books are charged to them, and borrowers returning books, must see that their receipt for them is properly cancelled. Damage to, or loss of books shall be made good to the satisfaction of the Librarian and of the Library Committee. Writing or making any mark upon any book belonging to the Library is unconditionally forbidden. Any persons found guilty of wilfully damaging any book in any way shall be excluded from the Library, and shall be debarred from the use thereof for such time as the Library Committee may determine.

16. Silence must be strictly observed in the Library.

---

§ X. PETER REDPATH MUSEUM.

1. The Museum will open every lawful day from 9 a.m. till 5 p.m., except when closed for any special reason by order of the Principal or Committee.

2. Students will obtain tickets of admission from the Principal on application.

3. Students will enter by the front door only, except when going to lectures.

4. Any students wilfully defacing or injuring specimens, or removing the same, will be excluded from access to the Museum for the session.

§ XI. McDONALD PHYSICS BUILDING.

The Building contains five storeys, each of 8,000 square feet area. Besides a lecture theatre and its apparatus rooms, it includes an elementary laboratory nearly 60 feet square; large special laboratories arranged for higher work by advanced students in Heat and Electricity, a range of rooms for optical work and photography; separate rooms for private thesis work by students; and two large laboratories arranged for research, provided with solid piers and the usual standard instruments. There are also a lecture room, with apparatus room attached, for Mathematical Physics, a special physical library, and convenient workshops. The equipment is on a corresponding scale, and comprises: (1) apparatus for illustrating lectures; (2) simple forms of the principal instruments for use by the students in practical work; (3) the most recent types of all the important instruments for exact measurement, by first class makers, for use in the laboratories for special work and research.

§ XII. FEES.

All fees and fines are payable to the Bursar of the College.

I. *Undergraduates.*—$37.00 per session, including Library, Gymnasium, Matriculation and the fee heretofore paid for the B.A. degree.

At the September entrance examinations, all candidates must pay a fee of $5.00 *before the examination.* This will not be returned to those who fail. For those who pass, it will be reckoned as part payment of the sessional fee of $37.00.

Matriculation fee for entrance into the Second Year $10. (Exigible from those who have failed in the First Year, and re-enter in the Second Year on examination.)

II. *Partial Students.*—$8.00 per session for one course of lectures, including the use of the Library; $4.00 per session for each additional course.

Partial Students are also required to pay $2 yearly for "Athletics and the care of the College grounds," unless they state in writing to the Dean their intention not to use the grounds.

Partial Students taking the full curriculum in any one year pay the same fees as Undergraduates in that year.

Special Fees.

Laboratory and Practical Classes, viz., *Chemistry*, *Botany*, *Physics*, each per session (optional)	$10 00
Elocution (optional)	3 00
Petrography (optional)	5 00
Gymnasium (for partial students), optional	2 50
Supplemental Examination, at date fixed by Faculty	2 00
Supplemental Examination, when granted at any other time than that fixed by the Faculty	5 00

Fee for a certificate of standing, if granted to a student on application.... ..... 1 00

Fee for a certificate of standing, if accompanied by a statement of classification in the several subjects of examination.... ..... 2 00

Examination Fee for Students of Affiliated Theological Colleges who present themselves for the entrance examination without intending to become Undergraduates..... 10 00

Examination Fee, for Students intending to enter the Medical Faculty..... 5 00

"Special" fees are additional to the regular fees paid by Undergraduates or Partial Students, but are payable only for the classes (optional) or objects named above.

N.B.—The lectures in one subject in any one of the four college years constitute a "Course."

All fees for Supplemental Examinations must be paid in the Secretary's office, and the tickets shown to the Dean before the Examination.

Graduates in Arts are allowed to attend, without payment of fees, all lectures, except those noted as requiring a special fee.

The fees must be paid to the Secretary, and the tickets shown to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty, and on payment of a fine of $2.

[All fines are applied to the purchase of books for the Library.]

Fee for the degree of M.A..... .... 10 00*

" " " *LL.D*..... .... 50 00*

If the degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is $25.00.

The M.A. or LL.D. fee must be sent with the thesis to the Secretary of the University. This is a condition essential to the reception of the application. The Secretary will then forward the thesis to the Dean of the Faculty.

Extract from the Regulations of the Board of Governors for Election of Fellows under Chap. V. of the Statutes of the University.

"From and after the graduation of 1888, all new Graduates shall "pay a Registration Fee of $2.00 at the time of their graduation, "in addition to the Graduation Fee; and shall be entered in the "University list as privileged to vote, and shall have voting-papers "mailed to them by the Secretary."

* A Bachelor of Arts or a Master of Arts intending to proceed to a higher Degree is required, *in addition* to the above, to keep his name on the books of the University, by the annual payment of a fee of $2 to the Registrar of the University. He may, if he prefer it, compound for the above annual fees, by the payment of $6 in one sum for the Master's Degree, or $30 for the Doctor's Degree, on or before the date of application for the Degree.

§ XIII. COURSES OF LECTURES.

I. ORDINARY COURSE.

1. CLASSICAL LITERATURE AND HISTORY.

(Major H. Mills Professorship of Classics.)

Professor:—Rev. G. Cornish, M.A., LL.D.

Associate Professor:—A. J. Eaton, M.A., Ph.D.

Sessional Lecturer:—John L. Day, B.A., M.D.

GREEK.

First Year.—Homer.—Odyssey, Book XI. Xenophon.—Hellenics, Book I.

Second Year.—Plato.—Apology. Aeschylus.—Prometheus Vinctus. History of Greece.

Third Year.—Lysias.—Contra Eratosthenem. Euripides.—Medea.

Fourth Year.—Demosthenes.—The Olynthiacs.

LATIN.

First Year.—Cicero.—De Amicitia. Sallust.—Catiline. Virgil.—Aeneid, Book VI. Latin Prose Composition and Translation at sight.—Bender's Roman Literature.—History of Rome.

Second Year.—Livy, Book XXI.—Horace, Epistles, Book I., 1 to 7. Translation at sight of passages from Cicero and Livy, and Latin Prose Composition based upon selections from the same authors.

Third Year.—Juvenal.—(Selections.) Pliny, Select Letters. Latin Prose Composition.

Fourth Year.—Tacitus.—Annals, Book II. Latin Prose Composition.

In the work of the Class the attention of the student is directed to the collateral subjects of History, Antiquities and Geography; also to the grammatical structure and affinities of the Greek and Latin Languages, and to Prosody and Accentuation.

The Latin pronunciation adopted in the lectures is based on the scheme issued by the Cambridge Philological Society (London: Trubner & Co.).

In Greek, the system of pronunciation, outlined in the preface of Goodwin's Greek Grammar, is recommended to the attention of students.

Number of lectures in Fourth Year—two weekly, or, at the discretion of the Professor, three.

---

2. ENGLISH LANGUAGE AND LITERATURE.

(Molson Professorship.)

Professor:—Chas. E. Moyse, B.A.

First Year.—English Literature. Two lectures a week. The course will present an outline of English Literature from the Anglo-Saxon Period to the present

day, and will be illustrated by printed syllabuses and lantern slides. The general subject will be divided into four periods (Pre-Chaucerian, Italian, French, Popular), and be approached, for the most part, through literary types. Students are recommended to use Morley's Charts of English Literature.

Third Year.—*A.* Chaucer's Prologue to Canterbury Tales. Lectures once a week (Prof. Moyse). *Text-Book.*—Chaucer's Prologue, etc., ed. Morris. *B.* Rhetoric. Lecture once a week (Mr. Lafleur). *Text-Book.*— Genung's Rhetoric.

Fourth Year.—English Literature : (*a*) The leading poets of the Nineteenth Century,—one lecture a week. (*b*) In addition to (*a*), students will be examined on characteristic poems of the authors treated. The time to be given to (*b*) may be regarded as equal to that required to obtain a good knowledge of (*a*). The course will be illustrated by printed syllabuses and lantern slides.

3. MENTAL AND MORAL PHILOSOPHY.

(John Frothingham Professorship of Mental and Moral Philosophy.)

Professor :—Rev. J. Clark Murray, LL.D.

Lecturer :—Paul T. Lafleur, M.A .

Second Year.—First Term.—Elementary Psychology. (*Text-Book.*—Murray's Handbook of Psychology, Book I.) Second Term :—Logic. (*Text-Book.*—Jevons' Elementary lessons in Logic.)*

Third Year.—First Term :—The Logic of Induction, as in Mill's System of Logic, Book III. Second Term :—The Psychology of Cognition, as in Murray's Handbook of Psychology, Book II., Part I.

Fourth Year.—First Term :—The Psychological Basis of Ethics. Second Term : —Ethics Proper, comprising the elementary principles of Jurisprudence and Political Science. *Text-Book.*—Murray's Introduction to Ethics.

In the Third and Fourth Years, students are also required to write occasional essays on philosophical subjects.

For Additional Courses see Honour Course.

---

4. FRENCH LANGUAGE AND LITERATURE

Professor :—P. J. Darey, M.A., B.C.L., LL.D., Officier d'Académie.

Sessional Lecturer :—Rev. J. L. Morin, M.A.

First Year.—Darey--Principes de Grammaire française. La Fontaine—Choix de fables. Molière—l'Avare. Dictation. Colloquial exercises.

Second Year.—Racine—Esther. Ponsard—l'Honneur et l'Argent. Contanseau —Précis de Littérature Française, depuis son origine jusqu'à la fin du XVIIe siècle. Translation into French :— Dr. Johnson—Rasselas. Dictation. Parsing. Colloquial exercises.

---

* The prizes are awarded on the work of the whole Session.

Third Year.—Corneille, Le Polyeucte. Cogery—Third French Course. Translation into French :—Johnson—Rasselas. Dictation. Contanseau—Précis de Littérature Française, depuis le XVIIIe siècle jusqu'à nos jours.

Fourth Year.—Cogery—Third French Course. Bonnefon—Les Ecrivains modernes de la France. Translation into French :—Morley—Ideal Commonwealths. French Composition. Dictation. Corneille, Le Polyeucte.

For Additional Courses see Honour Lectures.

The Lectures in the Third and Fourth Years are given in French.

---

5. GERMAN LANGUAGE AND LITERATURE.

Lecturer :—L. R. Gregor, B.A.

First Year.—Vandersmissen and Fraser's German Grammar ; Joynes' German Reader ; Dictation ; Colloquial exercises.

Second Year.—Vandersmissen and Fraser's German Grammar ; Joynes' German Reader ; Freytag—Die Journalisten ; Uhland—Ballads and Romances (Macmillan's Foreign School Classics) ; Translation at sight ; Parsing ; Dictation ; Colloquial exercises.

Third Year.—Vandersmissen and Fraser's German Grammar ; Lessing—Minna von Barnhelm ; Schiller—Siege of Antwerp ; History of German Literature ; German Composition ; Dictation.

Fourth Year.—German Grammar and Composition ; Gœthe—Aus meinem Leben ; Schiller—Wallenstein ; History of German Literature.

For Additional Courses see Honour Lectures.

---

6. HEBREW AND ORIENTAL LITERATURE.

Professor :—Rev. D. Coussirat, B.A., B.D., D.D., Officier d'Académie.

Elementary Course.—Reading and Grammar, with oral and written exercises in Orthography and Etymology.—Translation and Grammatical Analysis of Genesis.—*Text-Books.*—Harper's Elements of Hebrew ; and Introductory Hebrew Method and Manual.

Intermediate Course.—Grammar.—Dr. Harper's "Elements" and "Method."—Translation from the Hebrew Bible.—Exercises.—Hebrew into English and English into Hebrew.—Syntax.—Reading of the Masoretic notes.

Advanced Course.—Gesenius' Grammar, and Harper's Elements of Syntax.—Exercises continued.—Translation from the Hebrew Bible.—Reading of the Masoretic notes and of the Septuagint Version.

The course comprises Lectures on the above Language and its Literature in particular, its genius and peculiarities, with a general notice of the other Oriental Languages. Comparative Philology, affinity of Roots, etc., also receive due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, etc.

For Additional Course see Honour Lectures.

7. HISTORY.

Lecturer:—CHARLES W. COLBY, M.A., PH.D.

Second Year.—The Political History of Europe from 1789 to the Present Day. Two lectures a week.

It is the aim of these lectures to enable the student to follow intelligently the course of modern international relations. The most important subjects to be treated in detail are the French Revolution, the Growth of Democracy and Nationality, and the actual political state of the British Empire.

---

8. MATHEMATICS AND ASTRONOMY.

(PETER REDPATH PROFESSORSHIP OF PURE MATHEMATICS.)

Professor:—ALEXANDER JOHNSON, M.A., LL.D.

Sessional Lecturer—Rev. H. M. TORY, B.A.

First Year.—MATHEMATICS.—Arithmetic.—Euclid, Books 1, 2, 3, 4, 6, with definitions of Book 5 (omitting propositions 27, 28, 29 of Book 6); Todhunter's edition—or Hall and Stevens'; the latter is recommended to Candidates for Honours especially. Colenso's Algebra (Part I.) to end of Quadratic Equations.—Galbraith and Haughton's Plane Trigonometry to beginning of solution of Plane Triangles

Second Year.—MATHEMATICS.—Arithmetic, Euclid, Algebra and Trigonometry as before.—Nature and use of Logarithms.—Remainder of Galbraith and Haughton's Plane Trigonometry.

Third Year.—(*Optional, but open to those only who have studied Mathematical Physics*).—ASTRONOMY (Loclyer's Elementary Astronomy, English edition; first five chapters, viz: The Stars and Nebulæ; The Sun; The Solar System; Apparent movements; Time). Students are recommended to use with this an "Easy Guide to the Constellations," by Gall. This subject is taken with Optics.

Fourth Year.—ASTRONOMY.—(*Optional*) Galbraith and Haughton's Astronomy or Brinkley by Stubbs and Brunnow.—This subject is taken with Optics as one course. The lectures wil be given before Christmas.

---

9. NATUIAL PHILOSOPHY.

(W. C. MCDONALD PROFESSORSHIPS OF PHYSICS.)

Professors:— JOHN COX, M.A.
HUGH L. CALLENDAR, M.A.

Second Year.—ELEMENTARY MECHANICS.—One lecture a week up to March. An examination will be held then, which must be passed in order to secure credit for attendance on the ectures.

Third Year.—MATHEMATICAL PHYSICS.—Galbraith and Haughton's Mechanics, viz.: *Statics*, first 3 chapters, omitting sec. 5, chapter 1, and sec. 21, chapter

2; *Dynamics*, subjects of the first 5 chapters; the corresponding parts of Clerk Maxwell's "Matter and Motion"; Galbraith and Haughton's Hydrostatics. The lectures on this subject begun in the previous year will end about Christmas.

(*Optional, but open to those only who have studied the above Mathematical Physics*).—Optics (Galbraith and Haughton). The Optics and Astronomy form one course.

Third Year.—Experimental Physics.—Laws of Energy.—Heat, Light and Sound.

Fourth Year.—Experimental Physics.—Electricity and Magnetism.

Laboratory Course in Physics.—An Experimental Course requiring two afternoons per week (six hours) to be spent in practical measurements in the McDonald Physical Laboratory, during the Third and Fourth Years, in conjunction with the Ordinary Lecture Courses in Experimental Physics.

Subjects: Third Year. (1) Sound—Velocity of Sound; Determination of rates of vibration of Tuning Forks; Resonance; Laws of vibration of strings.

(2) Light—Photometry; Laws of Reflection and Refraction; Indices of Refraction; Focal Lengths and Magnifying Powers of Mirrors, Lenses, Telescopes and Microscopes; the Sextant, Spectroscope, Spectrometer, Diffraction, Grating, Optical Bench, and Polariscopes.

(3) Heat.—Construction and Calibration of Thermometers; Melting and Boiling Points; Air Thermometer; Expansion of solids, liquids, and gases; Calorimetry.

Fourth Year. — Magnetism.— Measurements of Pole Strength and Moment of a Magnet; the Magnetic Field; Method of Deflection and Oscillations; comparison of moments and determination of elements of Earth's magnetism. Frictional Electricity. Current Electricity.—Complete course of measurements of Current Strength, Resistance and Electromotive Force; Calibration of Galvanometers; the Electrometer; comparison of Condensers; Electromagnetic Induction.

Text-Book.— Glazebrook & Shaw's Practical Physics.

---

10. GEOLOGY, MINERALOGY AND PETROGRAPHY.

(Logan Professorship of Geology.)

B. J. Harrington, B.A., Ph.D., F.G.S., Professor of Mineralogy.

Frank D. Adams, M.Ap. Sc., Ph.D., F.G.S.A., Logan Prof. of Geology and Palæontology.

Fourth Year (1)—Mineralogy and Petrography.—An elementary course, in which attention is given more particularly to such minerals and rocks as are important in Geology or useful in the Arts.

(2) Structural and Dynamical Geology.—Denudation and Origin of Aqueous Deposits; Constructive Forces; Volcanoes and Earthquakes; Arrangement of Rocks on the large scale; Field Geology and Construction of Geological Maps and Sections.

(3) CHRONOLOGICAL GEOLOGY AND PALÆONTOLOGY.—Classification of Formations; Geological Periods; Mineralization and Classification of Fossil Remains; History of the several Periods with the Fauna and Flora of each Distribution, more especially in Canada.

Saturday excursions will be made to points of interest, and Museum demonstrations will be given.

TEXT-BOOKS.—Dawson's Handbook of Geology, Dana's Manual of Mineralogy. Books of reference will be indicated in the Library.

Students in Natural History are entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

For Additional Departments see Honour Course, II., infra.

The Geology course is especially fitted to those students who have taken the Natural Science studies of the previous years, but others are not excluded.

---

11. ZOOLOGY.

Lecturer:—W. E. DEEKS, B.A., M.D.

Third Year.—This course comprises:—Elementary Physiology based on Huxley's lessons; a general account of Embryology; the morphology, development and classification of the Invertebrata, with a general description of their habits, modes of life, etc.; and the comparative anatomy and classification of the Vertebrata. As far as possible, the Natural History of the Canadian Fauna, more especially, will be described.

In addition, weekly demonstrations are given in the Museum on dry and alcoholic preparations, both macro and microscopical, illustrating the lectures.

TEXT-BOOK.—Dawson's Handbook, with some additional work, which will be announced at the beginning of the session.

Fourth Year.—Additional Course. Two afternoons during the week. The preparation and study of animal tissues microscopically. This includes killing, hardening, sectioning, staining, mounting, etc. Practical Anatomy with lectures. The animals dissected will be representative types both Vertebrate and Invertebrate.

TEXT-BOOK.—Marshall and Hurst's Practical Zoology. A fee of $10 will be charged for the use of instruments, reagents and material.

---

12. BOTANY.

Professor:—D. P. PENHALLOW, B.Sc.

Demonstrator:—C. N. DERICK, B.A.

Second Year.—This course is designed to give the Students a thorough acquaintance with the principles of morphology and classification, the elements of histology and the most prominent physiological functions of the plant. The Flora of Canada will be given prominence as far as possible, and in descriptive work, constant use will be made of the large Herbarium and of the Botanic Garden. So far as time may permit, weekly excursions will be made for field study of plants.

TEXT-BOOKS.—Gray's Structural Botany. Gray's Manual. Penhallow's Classification. Penhallow's Guide to the Collection of Plants.

Third Year.—ADDITIONAL COURSE. *Vegetable Anatomy.*—Two lectures with practical work each week. Microscopical manipulations, micro-chemical reactions, general histology of Spermaphytes. Microscopical Drawing.

Fourth Year.—ADDITIONAL COURSE. *Vegetable Anatomy.*—Two lectures with practical work each week. A continuation of the Course in the Third Year embracing a study of the structure and life history of Pteridophytes, Bryophytes and Thallophytes. No student will be admitted to the course in the Fourth Year without having followed that for the Third Year.

TEXT-BOOKS.—Strasburger's Vegetable Histology. Goebel's Outlines of Classification and Special Morphology.

Fee for Additional Course, $10 per session for use of instruments and reagents.

A prize will be awarded to the student showing the greatest proficiency in the work of the two years.

---

13. CHEMISTRY.

(DAVID J. GREENSHIELDS PROFESSORSHIP OF CHEMISTRY AND MINERALOGY.)

Professor:—B. J. HARRINGTON, B.A., PH.D.

Lecturer:—NEVIL NORTON EVANS, M.A.SC.

First Year.—A course of Lectures preparatory to the course in Natural Science. The lectures are illustrated by experiments, and treat of the Elementary Constitution of matter, the Laws of Chemical Combination by weight and volume, the Atomic Theory, Quantivalence, Chemical Formulæ and Equations, Chemical Attraction, characteristics of Acids, Bases and Salts, Compound Radicals, the preparation and properties of the principal Elements, and many of their compounds, etc. A few Lectures are usually devoted to the consideration of some of the more important Organic Substances, including Starch, Sugars, the Vegetable Acids and Alkaloids, Alcohol, etc. During the course, attention is called as far as possible to the relations of Chemistry to various manufacturing industries.

TEXT-BOOK.—Remsen's Introduction to the study of Chemistry.

Third Year.—ADDITIONAL DEPARTMENT (*The Chemistry of the Metals, or Organic Chemistry*).—One lecture a week. (*Practical Chemistry*)—Qualitative Analysis, as in Fresenius' Qualitative Chemical Analysis, two afternoons a week.

Fourth Year.—ADDITIONAL DEPARTMENT.—A course of Practical Chemistry, in continuation of that of the Third Year.

NOTE.—The chemical laboratories are capable of accommodating about sixty Students, and afford excellent facilities for practical work. Students in Arts taking classes in Practical Chemistry pay a special fee of ten dollars for the session.

14. METEOROLOGY.

Superintendent of Observatory :—C. H. McLeod, Ma.E.

Instructions in Meteorological Observations will be given in the Observatory at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

---

15. PEDAGOGY.

Lectures on this subject will be given in the Normal School to undergraduates of the Third and Fourth Years who wish to obtain the Provincial Academy Diploma.

Lecture hours: 3 p.m. Tuesday and Friday.

---

16. ELOCUTION.

Instructor: J. P. Stephen.

Instruction is given in this subject at hours that may be settled at the beginning of the session. Special fee for session $3.

---

17. PHYSICAL CULTURE.

Medical Examiner and Instructor :—R. T. Mackenzie, B.A., M.D.

The classes will meet at the University Gymnasium, at hours to be announced at the commencement of the Session. The Wicksteed silver and bronze medals (the gift of Dr. R. J. Wicksteed) are offered for competition to students of the Graduating Class and to students who have had instruction in the Gymnasium for two sessions,—the silver medal to the former, the bronze medal to the latter (See Regulations appended.)

II. HONOUR COURSES.

1. CLASSICS.

THIRD YEAR.

Greek.

Greek Authors:—Plato, Apology, Crito, Laches and Euthyphro; Herodotus, Bk. VII.; Thucydides, Bk. VI.; Euripides, Medea. The Authors to be read in class will be selected at the beginning of the session.

2. *Translation at sight* from the works of Xenophon and Homer, and *Greek Prose Composition.*
3. *History of Greece* (Selections from Grote); Mahaffy's *History of Greek Literature* (Selections).
4. *General Paper* on Grammar, Antiquities, Mythology and Philology.

Latin.

1. *Latin Authors*:—Cicero, Select Letters, and De Officiis, Bk. III.; Lucretius (Selections); Sallust, Catiline and Jugurtha; Catullus (Selections); Horace, Epistles, Bks. I. and II; Tibullus and Propertius (Selections). Livy, Bks. XXI.-XXIV.
2. *Sight Translation* from Caesar, Nepos, Virgil, Ovid and Livy, and *Latin Prose Composition.*
3. *History of Rome* (Selected portions of Mommsen); Teuffel's or Cruttwell's *History of Roman Literature* (Golden Age of Roman Literature).
4. *Grammar: Mythology and Antiquities.* A paper testing the candidate's general knowledge of classical philology will be given. The following works are recommended for this purpose:
   Gow's Companion to School Classics (2nd Edition). Murray's Manual of Mythology. Giles, A short Manual of Philology for Classical Students. Madvig's Latin Grammar (rev. by Thacher). Guhl and Kohner's Life of the Greeks and Romans.

FOURTH YEAR.

Part I.—(1) *Greek Authors*:—Aeschylus, Prometheus Vinctus; Sophocles, Antigone; Euripides, Medea; Herodotus, Bk. IX.; Xenophon, Hellenics, Bks. I. and II.; Aeschines, Contra Ctesiphontem. (2) *Latin Authors*:—Horace, Epistles, Bk. I.; Juvenal, Satires VIII. and XIII.; Persius, Satires V. and VI.; Livy, Bk. XXI.; Tacitus, Annals, Bk. II.; Cicero De Officiis. (3) *Greek and Latin Prose Composition*:—As in Arnold's Greek Prose and Smith's Principia Latina, Part V. *Part II.*—(1) *Greek*:—Plato, Republic, Books I. and II.; Aristotle, The Poetics; Thucydides, Books VI. and VII; Hesiod, Works and Days; Aeschylus, Seven against Thebes; Aristophanes, The Frogs; Pindar, Olympic Odes; Theocritus, Idylls I. to VI.; Demosthenes, De Corona. (2) *Latin*:—Livy, Bks. XXII. and XXIII.; Tacitus, Annals, Book I.; Tacitus, Histories, Book I.; Virgil, Æneid, Books I. to IV.; Plautus, Aulularia; Terence, Adelphi; Juvenal, Sat. X.; Cicero De Imperio Cn. Pompeii. (3) *History of Greece and Rome*:—*Text-Books.*—1 Grote's History of Greece. 2. Arnold's History of Rome. 3. Mommsen's History of Rome. 4. Mahaffy's History of Greek Literature. 5. Cruttwell's History of Roman Literature. 6. Cruttwell and Banton's Specimens of Roman Literature. 7. Haigh's Attic Theatre. (4) *Composition*:—Composition in Greek and Latin Prose. 5. General Paper on Grammar, History and Antiquities.

---

2. MENTAL AND MORAL PHILOSOPHY.

THIRD YEAR.

Part I.—Schwegler's History of Philosophy, Chapters 1-21 inclusive; Mill's System of Logic, Books IV. and V.; James' Principles of Psychology Chapters 10-16 inclusive; selected portions from Thomson's Outline of the

Laws of Thought, from Jevons' Principles of Science, and from Venn's Empirical Logic. Any two of these subjects, along with the Honour Lectures, may be taken as the Additional Course.

Part II.—Plato's Theaetetus; Fraser's Selections from Berkeley.

FOURTH YEAR.

Part I.—Erdmann's History of Philosophy, Vol. II. (Engl. Transl.); James, Principles of Psychology, Vol. II.; Spencer's First Principles; Watson's Comte, Mill and Spencer: an Outline of Philosophy; Mill's System of Logic, Book VI. Any two of these subjects along with the Honour Lectures may be taken as the Additional Course.

Part II.—Aristotle's Nicomachean Ethics; Zeller's Stoics, Epicureans and Sceptics; Spinoza's Ethics; Watson's Selections from Kant; Maine's Ancient Law.

N.B.—The class essays of Candidates for Honours are expected to display superior ability in the discussion of philosophical subjects

---

3. ENGLISH AND HISTORY.

(A). ENGLISH LANGUAGE AND LITERATURE.

LECTURES.—The following subjects and authors in the courses given below will be treated in lectures :—

Third Year.—Anglo-Saxon and Early English (including Chaucer), two lectures a week. In this course textual reading will be supplemented by notes on the historical development of English word-forms and on Teutonic philology. Milton, Spenser (one lecture a week), Dryden, Addison, Wordsworth (one lecture a week).

Fourth Year.—Anglo-Saxon (one lecture a week), Moeso-Gothic and Early English (one lecture a week), Shakspere and Pope (one lecture a week), Shelley, Tennyson and Browning (one lecture a week).

THIRD YEAR.

AUTHORS. *Part I.*—Early English; Morris and Skeat, Part II., Extt. I-IX., inclusive Spenser—Faerie Queene, Bk. I.; Milton—Comus; Burke—Reflections on the French Revolution. (The above mentioned portion of the Honour work constitutes the Additional Course of the Third Year.) Sweet's Anglo-Saxon Reader; Extt. IV., VIII. and XXI.; Dryden—Annus Mirabilis; Absolom and Achitophel, Part I.; the Preface to the "Fables."

Part II.—Sweet's Anglo-Saxon Reader; the pieces in verse; Chaucer—Assembly of Foules (ed. Lounsbury); Sidney—An Apology for Poetry (ed. Cook); Milton—Shorter English Poems; Areopagitica (ed. Hales); Addison—Essays on Paradise Lost and on the Imagination (Spectator); Wordsworth—Prelude (Moxon's ed.); Leslie Stephen—English Thought in the Eighteenth Century, Vol. II, chap. X., sections V. to X. inclusive.

FOURTH YEAR.

AUTHORS. *Part I.*—Sweet's Anglo-Saxon Reader, Extt. II., XIII., XX.; Pope—Essay on Criticism, Essay on Man; Milton—Lycidas; Shelley—Adonais; Tennyson—In Memoriam. (The above-mentioned portion of the Honour work constitutes the Additional Course of the Fourth Year.) Early English; Morris and Skeat, Part II., Extt. X-XX inclusive; Shakspeare—Love's Labour Lost—A Midsummer Night's Dream—Hamlet Matthew Arnold—Essays in Criticism (the second series).

Part II.—Portion of Beowulf (ed. Harrison and Sharp); Moeso-Gothic, the Gospel of St. Mark (ed. Skeat); Sir Thomas More—Utopia (ed. Arber); Villiers—Rehearsal (ed. Arber); Campbell—Pleasures of Hope; Tennyson—Coming of Arthur, Gareth and Lynette, Holy Grail, Passing of Arthur; Browning—Christmas Eve and Easter Day.

(B). HISTORY.

THIRD AND FOURTH YEARS.

(*a*). The History of Europe from the Reformation to the French Revolution. Two lectures a week and a Thesis.

The subjects to be discussed at greatest length are as follows:—Humanism to the North of the Alps; the Reformation as a European Movement; The Catholic Reaction; the Dutch Republic; Parliament and the Stuarts; the Decline of Spain; the Thirty Years War; Absolutism in France; the Rise of Prussia; the Wars and Diplomacy of the 18th Century; the Foundation of the Colonial Empire of Great Britain. Lectures will also be given on leading topics connected with the intellectual history of the 16th, 17th and 18th centuries.

(*b*). Studies in European Democracy prior to the French Revolution. Two lectures a week.

---

4. MATHEMATICS AND PHYSICS.

First and Second Years.—MATHEMATICS.—Hall and Stevens' Euclid; McDowell's Exercises in Modern Geometry; Hall and Knight's Advanced Algebra; Todhunter's or Burnside and Panton's Theory of Equations (selected course); Lock's Higher Trigonometry, with McClelland and Preston's Spherical Trigonometry, Part I.; Salmon's Conic Sections, chapters 1, 2, 3, 5, 6, 7, and 10 to 13 inclusive; Williamson's Differential and Integral Calculus (selected course).

Third Year.—MATHEMATICAL PHYSICS.—Part I.—Minchin's Statics, Vol. I. selected chapters. Williamson and Tarleton's Dynamics, Chaps. 1 to 8 inclusive. Part II.—Remainder of Minchin's Statics, Vol. I., Besant's Hydro-Mechanics, Part I., chaps. 1, 2, 3, 7; Godfray's Astronomy; Parkinson's Optics. MATHEMATICS.—Calculus and Geometry of Three Dimensions in alternate years.

B.A. HONOUR COURSE.

Part I.—MATHEMATICAL PHYSICS.—Honour Course of the Third Year (the whole). PURE MATHEMATICS—Williamson's Differential and Integral Calculus; Salmon's Geometry of Three Dimensions (selected course).

Part II.—PURE MATHEMATICS.—Boole's or Forsyth's Differential Equations (selected course). MECHANICS.—Minchin's Statics, Vol. II., except chapters 14 and 18. Williamson's and Tarleton's Dynamics (the whole, including the Dynamics both of Rigid Bodies and of a particle). Routh's Dynamics of a Rigid Body (for reference). Besant's Hydro-Mechanics.

PHYSICAL ASTRONOMY.—Godfray's Lunar Theory, or Cheyne's Planetary Theory; Newton's Principia, Lib. I., Sects. 1, 2, 3, 9 and 11.

LIGHT.—Preston's Theory of Light.

ELECTRICITY AND MAGNETISM.—Ordinary Course, with Cumming's Theory of Electricity and Maxwell's Elementary Electricity, or Emtage's Electricity and Magnetism.

HEAT, ACOUSTICS } As in ordinary course.

---

5. GEOLOGY AND NATURAL HISTORY.

THIRD YEAR.

Part I.—Mineralogy.—Crystallography. Physical properties of minerals dependent upon light, electricity, state of aggregation, etc. Chemical composition. Principles of classification. Description of species important as constituents of rocks. (One lecture weekly during the First Term, and two during the Second.)

Part II.—Blowpipe Analysis and Determinative Mineralogy.—One afternoon weekly in the Laboratory during the session. *Text-Book.*—Brush's Determinative Mineralogy and Blowpipe.

Instructions will be given to the class for study and collection in the vacation

B.A. HONOUR COURSE.

Part I.—(1) *Mineralogy.*—Description of mineral species, particular attention being called to the Economic Minerals of Canada, Calculations of Mineralogical Formulæ, Quantivalent Ratios, etc. (Two lectures weekly in the First Term.)

(2) *Palæontology.*—Being an extension of that in the Third Year, with special studies of the more important groups of Fossils. One lecture and one demonstration weekly in the First Term.

Part II.—(3) *Petrography.*—Essential and accessory constituents of Rock. Macroscopic and microscopic characters. Preparation of Rock-sections. Microscopic examination of Minerals and Rocks. Principles of classification. Description and determination of Rocks. (One lecture weekly in the Second Term, with additional practical work and demonstrations.)

(4) *Canadian Geology.*—Special studies of the Geology of the Dominion of Canada. (One lecture weekly in the Second Term.)

(5) *Practical and Applied Geology.*—Including methods of observing and recording geological facts, and searching for mineral deposits.—Origin and mode of occurrence of ore deposits (one lecture weekly in the Second Term), with additional practical work and demonstrations.

During the second term, four hours a week will be devoted to practical work and demonstrations, which will include each week a colloquium on some Geological question.

TEXT-BOOKS.—Dana, Geikie, Dawson, Kemp, Nicholson, Survey Reports, etc.

Candidates for Honours will be expected to attain such proficiency as to be able to undertake original investigations in some at least of the subjects of study.

Students in the Faculty of Applied Science may be Candidates for Honours.

ADDITIONAL DEPARTMENT.

Third Year.—Mineralogy as in Part I. above.

Fourth Year.—Palæontology and Practical Geology as in Parts I. and II. above. Or the student may take the Lectures in Mineralogy instead of Palæontology, or those in Petrography or Canadian Geology instead of Practical Geology.

---

6. MODERN LANGUAGES.

(French and German, both of which must be taken.)

THIRD YEAR.

Part I.—FRENCH.—La Fontaine :—Les Fables. Racine :—Les Plaideurs. Paul Albert :—Littérature de XVIIe siècle. Translation into French—Goldsmith :—The Vicar of Wakefield. Corneille :—Horace.

GERMAN.—A special study of Gœthe's Faust (Part I.) ; Schiller—Wilhelm Tell ; Macmillan's German Composition.

(Either of the above may be taken as the Additional Course in the language to which it belongs. See § III.)

The Ordinary Course in French and German must also be taken. See § III.

Part II.—FRENCH.—Racine :—Phèdre, Les Plaideurs. Boileau :—L'Art Poétique. Pascal :—Les Pensées. Clédat :—Grammaire Elémentaire de la vieille langue française.

GERMAN.—Lessing.—Nathan der Weise ; Schiller.—Don Carlos ; Heine.—Die Harzreise ; History of German Literature (Kluge).

FOURTH YEAR.

Part I.—FRENCH.—Clédat, Grammaire Elémentaire de la vieille langue française. Paul Albert :—La Littérature Française dès les origines à la fin du XVIe. siècle. Emile Souvestre :—Un Philosophe sous les toits. Translation into French :—As You Like it.

GERMAN.—Lessing.—Laokoon ; Behaghel's Deutsche Sprache ; Schiller's Jungfrau von Orleans ; Macmillan's German Prose Composition.

(Either of the above may be taken as the Additional Course in the language to which it belongs)

The Ordinary Courses in French and German must also be taken.

Part II.—FRENCH.—Molière:—Le Misanthrope. Victor Hugo:—Hernani. La Rochefoucaud:—Les Maximes. Montaigne:—Les Essais (Extraits par Eug. Voizard). Clédat, Grammaire Elémentaire de la vieille langue française. Constans:—Chrestomathie des anciens textes français.

GERMAN.—Gœthe.—Hermann und Dorothea; Schiller—Maria Stuart; Scheffel.—Trompeter von Säkkingen. Selections from Heine's Lyrical Poems; Zarncke—Das Nibelungenlied; History of German Literature. (Kluge); Original Compositions in German.

For First and Second Rank Honours, the successful Candidates must be capable of speaking and writing both languages.

7. SEMITIC LANGUAGES.

THIRD YEAR.

Part I.—Hebrew.—Genesis, Isaiah, 40-66. Ecclesiastes.—*Literature.* F. Lenormant; The beginnings of History.

Part II.—Aramaic.—Daniel, Ezra; Selections from the Targums. *Literature.*—Sayce; Lectures on the Origin and Growth of Religion.

FOURTH YEAR.

Part I.—Hebrew.—Malachi, Psalms, 1-72; Job, 26-42. *Literature.*—Renan: A General History of the Semitic Languages.

Part II.—Syriac.—Selections from the Peshito, and from the Chronicles of Bar Hebræus.—*Literature.*—W. Wright: Comparative Grammar of the Semitic Languages.

ADDITIONAL COURSE.

Part II. of each year (Literature excepted), along with the Honour Lectures.

LECTURES IN THE UNDERGRADUATE COURSE IN THE FACULTY OF ARTS.

SESSION OF 1895–96.

	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
First Year.	9	Latin.	† Mathematics. * Hebrew.	Mathematics.	† Mathematics.	Mathematics.
	10	Mathematics.	Greek.	Latin.	* French. * Hebrew.	Greek.
	11	* French.	* German.	* German.	* German.	English.
	12	Elementary Chemistry.	* French.	English.	Latin.	Elementary Chemistry.
Second Year.	9	* French.	Logic.	* French.	* Hebrew.	* French.
	10	Greek.	* German, * Hebrew.	Logic.	Logic.	* German. † Mathematics.
	11	Mathematics.	Latin.	Botany. † Mathematics.	Latin.	Greek.
	12	Botany. † Mathematics.	Math. Phy.	Latin (*a*.)	Modern History.	Modern History.
Third Year.	9	English.	Greek.	† Greek. † Math. Phys.	Greek.	German. † Math. Phys.
	10	† Geology. (*b*) German. †Math. Physics.	French. † Ment. Phil.	† Anglo-Saxon. Math. Physics.	French. Chemistry.	† Greek. † English. † Mineral- Rhetoric. [logy.
	11	† Mental Philosophy. Mental Philosophy.	† Latin. Zoology.	Mental Phil., Hebrew.	Hebrew. Zoology.	† Syriac, etc. Math. Physics.
	12	† Latin. † Math.	Experimental Physics.	Latin. † Syriac.	Experimental Physics.	Latin.
Fourth Year.	9	Exp. Physics.	[(*a*) Astronomy. (*a*) † Mineralogy.	Geology, † Greek, † Math.	Exp. Physics.	† Greek. † Math. Phys.
	10	Geology.	French. † Ment. Phil.	† Astronomy.	German. History.	Geology.
	11	Latin. † Geology. † Math.	Moral Phil. † Math. Phys.	Greek.	† Mental Phil. Hebrew. Moral Philosophy.	French. † Geology. † Anglo-
	12	Moral Phil.	† Chaldee.	† Mineralogy (*a*). Hebrew.	† Chaldee. Astronomy. (*a*)	Saxon and Early English. German.

(*a*) During First Term. (*b*) Second Term. † For Candidates for Honours.
* The student may take at his option French or German in the first two years, or, if a Theological Student, Hebrew.
Library open every day, 9 to 6 and 8 p.m. to 10 p.m. during session. The Museum will be opened as arranged by the Principal.
Determinative Mineralogy, Wednesday, at 2 p.m. Practical Chemistry, at 2 p.m., for 3rd and 4th Years; First Year with the Class in Applied Science.

Special Course for Women.

IN THE FACULTY OF ARTS.

Donalda Endowment.

Professors and Lecturers (as on page 1). Lady Superintendent, Miss Helen Gairdner.

The classes for women under this endowment are wholly separate, except those for Candidates for Honours (including most of the additional courses in the Third and Fourth Years). The examinations are identical with those for men. Women will have the same privileges with reference to Classing, Honours, Prizes and Medals as men.

Regulations for Examinations, Exemptions, Boarding-Houses, Attendance, Conduct, Library and Museum are the same as for men. Undergraduates wear the Academic Dress; others do not.

In September, 1895, a Scholarship, value $125 yearly (tenable for two years), will be offered for competition in Mathematics to Students of the Third Year. The course is the same as for the Mathematical Scholarship open to men.

The *Jane Redpath Exhibition* is open for competition, at the beginning of the First or Second Year, to both men and women.

Two other Exhibitions (one of the value of $100, along with free tuition, the other $120 without free tuition) are open for competition in the First or Second Year to Students of the Donalda Department only. For course see §II. *ante*. Candidates for these Exhibitions are allowed, according to the general rule of the Donalda Department, to substitute an additional modern language for Greek in the examination. In this case, while the regulation concerning one modern language will for Entrance only be as in §II. *ante*, the course in that which is to be substituted for Greek in the Exhibition Examination will be :—

For First Year :—

French :—Grammar—Darey's Principes de Grammaire française.—La Fontaine's Fables. Molière—Le Bourgeois Gentilhomme. Sardou—Mlle de la Seiglière. Translation from English into French.

or *German*:—German Grammar and Composition; Adler's Reader—First and Second Sections; Schiller—Der Gang nach dem Eisenhammer, Das Lied von der Glocke; Stifter's Haidedorf (Heath & Co.); Translation from English into German.

N.B.—For Adler's Reader, substitute in 1896, Theodor Storm's Immensee and von Hillern's Höher als die Kirche (both published by Heath & Co.).

For Second Year :—

French:—Eugène Voizard, Essais de Montaigne. Lamartine, Jeanne d'Arc. CORNEILLE, Cinna.

or *German*:—Schiller—Der Neffe als Onkel, Egmont's Leben und Tod, Der Geisterseher, Die Kraniche des Ibykus; German Grammar and Composition; Translation of French and English into German.

One free tuition may be awarded to a Candidate who approaches very near to the winner of either of the Exhibitions.

The income of the *Hannah Willard Lyman Memorial Fund* will be given in prizes.

I. MATRICULATION AND ADMISSION.

Classics.—I. *Latin.*—Caesar, Bell. Gall., Books I. and II.; and Virgil, Aeneid, Book I; Latin Grammar.

Greek.—Xenophon, Anabasis, Book I.; Greek Grammar.

Candidates who cannot pass in Greek may substitute an additional modern language, subject to the same regulations throughout the course of four years. In and after 1895, there will be an entrance examination in German for such candidates.

An equivalent amount of other books or other authors in Latin and Greek than those named may be accepted by the Examiners, on application made through the Professor of Classics.

Mathematics.—Arithmetic, including a knowledge of the Metric System; Algebra to Quadratic Equations (inclusive) as in Colenso; Euclid, Books I., II., III.

English.—Writing from Dictation. A paper on English Grammar, *including Analysis*. A paper on the leading events of English History. Essay on a subject to be given at the time of the Examinations.

French.—Grammar up to the beginning of Syntax. An easy translation from French into English. Candidates taking Greek and unable to take French are not excluded, but will be required to study German after entrance. This regulation holds good only until 1895.

German.—First eighty pages of Joynes' German Reader, or equivalent, German Grammar.

For 1895 the requirements for the A.A. or an equivalent will be accepted.

(Associates in Arts, who, at their special Examination, have passed in Latin, Algebra and Geometry, are not required to present themselves for the Matriculation Examination in these subjects.)

PARTIAL STUDENTS.—Candidates unable to pass in all the above subjects may be admitted as Partial Students, in the separate classes; if prepared to enter in three of the subjects of the ordinary course of study, they may in the First Year make good their standing as Undergraduates at the Christmas or Sessional Examinations.

II. ORDINARY COURSE OF STUDY FOR THE DEGREE OF B.A.

In separate Classes.

First Year.—Classics; French or German; English Grammar and Literature; Pure Mathematics; Elementary Chemistry.

The first year course in German is as follows:—

German: Vandersmissen and Fraser's German Grammar; Joynes' German Reader; Freytag — Die Journalisten; Dictation; Colloquial exercises.

Second Year.—Classics; French or German; English Literature; Elementary Psychology and Logic; Pure Mathematics and Mathematical Physics; Botany.

Third Year.—Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics); with any three subjects out of the two following divisions, at the option of the Student, provided two be selected from one division and one from the other:—

I. Literature, etc.—(*a*) Greek or Latin, according as Latin or Greek has been previously chosen. (*b*) French or German (whichever has been taken in the first two years). (*c*) English and Rhetoric. (*d*) Mental Philosophy.

II. Science.—(*e*) Optics and Descriptive Astronomy. (*f*) † Experimental Physics. (*g*) Natural Science (Zoology).

Fourth Year.—Latin or Greek, same Language as in Third Year; Mathematical Physics (as in Third Year), or Astronomy and Optics; Moral Philosophy, with any three subjects out of the two following divisions, at the option of the Student, provided two be selected out of the one division, and one out of the other.

I. Literature, etc.—(*a*) Greek or Latin, according as Latin or Greek has been taken above. (*b*) French or German, same language as in Third Year. (*c*) History.

II. Science.—(*d*) Astronomy and Optics, if not chosen as above. (*e*) † Experimental Physics. (*f*) Natural Science (Geology).

† Undergraduates claiming exemptions (see § V.) cannot take Astronomy and Optics or Experimental Physics if they have not taken the Third Year Mathematical Physics.

Instead of two distinct subjects in one of the above divisions, the student in either Third or Fourth Year may select one subject only, together with an additional course in the same, or any other of these subjects under the above rules (if arrangements be made by the Faculty for it), provided she has been placed in

the first class in the corresponding subject at the preceding Sessional Examination (viz., Intermediate or Third Year, according to standing).

The additional course is intended to be more than an equivalent, in the amount of work involved, for any of the other subjects in the Division.

Additional courses are provided at present in Botany and Practical Chemistry

Gymnastics.—A class will be conducted by Miss Barnjum, which will be optional and open to Partial Students.

Elocution.—Instruction in this subject will be given to those who desire it, by Mr. J. P. Stephen. Special fee for session, $3.

HONOUR COURSES AND ADDITIONAL COURSES.

(*In Mixed Classes.*)

Undergraduates desirous to take one of the Honour Courses in Classics, Mathematics, Mathematical Physics, Mental and Moral Philosophy, English Language and Literature, History, Geology and other Natural Sciences, Modern Languages, or such portions of the Honour Courses as constitute the "Additional Courses," may in the Third and Fourth Years obtain exemptions to the same extent as those given to men, but must take the same lectures with men.

etails will be found in Section XIII. of the Calendar.

III. DEGREES.

Students are admissible to the degrees of B.A., M.A., and LL.D., conferred in the usual way, on the usual conditions; and will be entitled to all the privileges of these degrees, except that of being elected as Fellows.

IV. FEES.

The fees are the same as for men (see Section XII., *ante*).

The fees are to be paid to the Registrar of the University, from whom tickets for the Library and copies of the Library Rules may be obtained.

Exemptions from fees may be allowed to the highest pupil of the Girls' High School of Montreal and of other Schools, on the same terms as to men.

One exemption from tuition fees is annually allowed to the pupil (boy or girl) of the Montreal High School holding an exemption from the Schools of the Protestant Commissioners, Montreal, who has taken the highest marks at the A. A. Examinations and is recommended by the Commissioners.

V. LODGINGS, &c.

Women not resident in Montreal, proposing to attend the classes, and desiring to have information as to suitable lodgings, are requested to intimate their wishes in this respect to the Registrar of the University, at least two weeks before the opening of the session.

Students desiring information as to the above or other matters are referred to the Lady Superintendent, who will be found in her office in the rooms of the Donalda Department, every day during the session, except Saturday.

LECTURES OPEN TO PARTIAL STUDENTS, SESSION 1895-96.

CHEMISTRY :—*Dr. Harrington.* Tuesday and Thursday at 12.

BOTANY :—*Prof. Penhallow.* Monday at 11, Wednesday at 12.

ZOOLOGY :—*Dr. Deeks.* Tuesday and Thursday at 12.

GEOLOGY :—*Dr. Adams.* Monday at 12, Friday at 9 a.m., and Wednesday at 10 a.m.

EXPERIMENTAL PHYSICS :—*Professor Cox and Prof. Callendar.* Tuesday and Thursday, at 10 a.m.

PSYCHOLOGY AND LOGIC :—*Rev. Dr. Murray and Mr. Lafleur.* Wednesday and Friday at 2 p.m., and Monday at 12.

MENTAL PHILOSOPHY :—*Rev. Dr. Murray and Mr. Lafleur.* Monday and Wednesday at 3 p.m.

MORAL PHILOSOPHY :—*Rev. Dr. Murray.* Tuesday, Wednesday and Thursday at 12.

RHETORIC :—*Mr. Lafleur.* Tuesday at 11 a.m

ENGLISH :—*Prof. Moyse.* Language and Literature, Tuesday and Thursday at 11 a.m., Monday at 10 a.m., and Wednesday at 11 a.m.

HISTORY :—*Dr. Colby.* Wednesday and Friday at 3 p.m.

LATIN* AND GREEK*. FRENCH*. GERMAN*. MATHEMATICS*. MATHEMATICAL PHYSICS*.

Those Courses in which two lectures weekly are delivered will each amount to about 45 lectures, and the others in proportion.

---

*The lectures on these subjects extend over all the Years of the Course, and the hours will depend on the standing of Students with respect to previous preparation as ascertained by examination.

FACULTY OF ARTS, 1895-6.

*Ordinary Lectures in the Donalda Special Course for Women.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
First Year.	10	Greek.	English.		†Mathematics.	
	11	German.	† Mathematics.	Latin.	English.	Greek.
	12		Chemistry.	Mathematics.	Chemistry.	Latin.
	2	Mathematics.	French.		French.	Mathematics.
	3	Latin.			German	
Second Year.	9			Latin (α).		
	10	Mathematics.	† Math.	French.	Greek.	Latin.
	11	Botany.	Math. Phys.		† Mathematics.	German.
	12	Logic.	Latin.	Botany.		† Mathematics
	2			Logic.		Logic.
	3	German.	Greek.	Mod. History.	French.	Mod. History.
Third Year.	9					
	10	English.	Greek, Exp. Physics.		Greek, Exp. Physics.	French.
	11	French.	Rhetoric.	Latin.	Math. Physics.	
	12	Latin.	Zoology.		Zoology.	Math.Physics
	2				German.	
	3	Metaphysics.		Metaphysics.		
	4	German.				
Fourth Year.	9	Astronomy (α)		German.		Geology.
	10	French	Exp. Physics.	Geology.	German, Exp. Physics.	French.
	11		Latin.	English Lit. Astronomy (α).	Greek, Math. Physics.	
	12	Geology.	Moral Phil.	Moral Phil.	Moral Phil.	Math. Phys.

(α) During First Term.
For Candidates for Honours.

Faculty of Applied Science.

THE PRINCIPAL (*ex officio*).

Professors :—HARRINGTON. BOVEY. MCLEOD. CHANDLER.
Professors ;—CARUS-WILSON. COX. NICOLSON. CALLENDAR.

Associate Professor :—BAMFORD.

Lecturers :—CARLYLE. LEA.
Lecturers ;—EVANS. SMITH.

Demonstrators : —TORY. PITCHER. BRODIE. HERDT.

With the foregoing are associated the following Professors and Lecturers in the Faculty of Arts :

Professors :—MOYSE. PENHALLOW. ADAMS. COLBY.
Lecturers :—GREGOR. DEEKS. INGRES. MORIN.

Dean of the Faculty :—HENRY T. BOVEY, D.C.L., LL.D., M. Inst. C.E.

§ I. GENERAL STATEMENT.

The Instruction in this Faculty is designed to afford a complete preliminary training of a practical as well as theoretical nature to such Students as are preparing to enter any of the various branches of the professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Five distinct Departments of study are established, viz. :—

(1)—Civil Engineering and Surveying. (2)—Electrical Engineering. (3)—Mechanical Engineering. (4)—Mining Engineering. (5)—Practical Chemistry.

Each of these extends over four years, and is specially adapted to the prospective pursuits of the Student. The subjects of instruction in the several Departments are given in the Table on the following page.

The Degrees conferred by the University upon such undergraduates of the Faculty as shall fulfil the conditions and pass the Examinations hereinafter stated will be, in the first instance, "Bachelor of Applied Science," mention being made in the Diploma of the particular Department of study pursued; and subsequently the degree of "Master of Engineering" or of "Master of Applied Science." (§ IV.)

§ II. TABLE SHOWING THE SUBJECTS OF INSTRUCTION AND HOURS PER WEEK DEVOTED TO EACH SUBJECT.

	SUBJECTS.	DESCRIPTION UNDER		CIVIL ENGINEERING.	ELECTRICAL ENGINEERING.	MECHANICAL ENGINEERING.	MINING ENGINEERING.	PRACTICAL CHEMISTRY.
FIRST YEAR.	Chemistry	§ XI.,	8	2	2	2	2	2
	English	"	16	2	2	2	2	2
	French or German	"	15	3	3	3	3	3
	Mathematics	"	14	10	10	10	10	10
	Mechanism	"	5	1	1	1	1	1
	Freehand Drawing	"		3	3	3	3	3
	Geometrical Drawing	"	3	6 (a) (b)	6 (a) 3 (b)	6 (a) 3 (b)	6 (a) 3 (b)	6 (a) 3 (b)
	Chemical Laboratory			3	3	3	3	3
	Mathematical Laboratory	§ XII.	1	3 (b)	3 (b)	3 (b)	(b)	3 (b)
	Shopwork	§ XIV.		7	7	7	7	7
SECOND YEAR.	Botany	§ XI.,	12	—	—	—	—	2
	Chemistry	"	8	—	—	—	7	14
	Descriptive Geometry	"	3	3	3	3	3	—
	French or German	"	16	2	2	2	2	2
	Mathematics	"	14	6	6	6	6	—
	Physics	"	13	2	2	2	2	2
	Kinematics of Machinery	"	6	—	1	1	—	—
	Surveying	"	2	3	—	—	3	—
	Zoology*	"	11	3	—	—	3	—
	Drawing	"	3	6	3	3	3	—
	Physical Laboratory	§ XII.	3	3	3	3	3	3
	Shopwork	§ XIV.		3	6	3	3	—
THIRD YEAR.	Chemistry	§ XI.,	8	—	—	—	6	16
	Determinative Mineralogy	"	8	—	—	—	3	3
	Dynamics of Machinery	"	6	—	2	2	—	—
	Descriptive Geometry	"	3	2	—	—	—	—
	Electrical Engineering	"	5	—	1	—	—	—
	Geology and Mineralogy **	"	10	3	—	—	4 to 5	4 to 5
	Mathematics	"	14	3	3	3	3	—
	Machine Design and Exercises	"	6	—	2	5	—	—
	Mining	"	7	—	—	—	3	—
	Physics	"	13	2	2	2	2	2
	Railroad Engineering	"	1	1	—	—	Opt.	—
	Surveying	"	2	3	—	—	3	—
	Theory of Structures	"	1	3	3	3	3	—
	Zoology *	"	11	—	—	—	—	3
	Drawing	"	3	9	3	3	3	—
	Electrical Engineering Laborat.			—	6 (a)	—	—	—
	Mathematical Laboratory	§ XII.	1	3 (c)	3 (c)	3 (c)	3 (c)	—
	Physical Laboratory	"	3	3	3 (c) 6 (d,b)	3	3	3
	Testing Laboratory	"	4	7 (b)	4 (b)	4 (b)	4 (b)	—
	Shopwork	§ XIV.		—	6	6	—	—
FOURTH YEAR.	Assaying	§ XI.	18	—	—	—	9	—
	Chemistry	"	8	—	—	—	—	24
	Dynamics of Machinery	"	6	—	1(a), 2(b)	1(a), 2(b)	—	—
	Electrodynamics	"	5		2	—	—	—
	Electrical Engineering (Descriptive)	"	5	1(b) opt.	1 (b)	1 (b)	1(b) opt.	—
	Geodesy	"	2	2	—	—	—	—
	Geology and Mineralogy **	"	10	—	—	—	3	3
	Hydraulics	"	1	2	2	2	2	—
	Machine Design	"	6	—	1	1	—	—
	Practical Hydraulics	"	1	1	—	—	1	—
	Metallurgy	"	7	—	—	—	2	2
	Railroad Engineering	"	1	1	—	—	Opt.	—
	Theory of Structures	"	1	4	—	—	—	—
	Thermodynamics	"	9	2	2	2	2	—
	Drawing (Designing)	"	3	8	3	9	8	—
	Electrical Engineering Laboratory	§ XII.	6	—	12	—	—	—
	Geodetic Laboratory	"	7	3	—	—	—	—
	Hydraulic Laboratory	"	8	3	3	3	3	—
	Mechanical Laboratory	"	9	—	—	6	—	—
	Museum Work	§ XIII.		—	—	—	6	—
	Physical Laboratory	§ XII,	3	Opt.	6	Opt.	Opt.	Opt.
	Testing Laboratory	"	4	6	—	1	3	—
	Thermodynamic Laboratory	"	5	—	—	7	—	—
	Shopwork	§ XIV.		3	4	4	—	—

(a) First term. (b) Second Term. (c) First half of first Term. (d) Second half of first Term.
* Besides work in the Museum.
** Also Saturday excursions, and Museum and Petrographical work.

§ III. MATRICULATION AND ADMISSION.

All Students are recommended to take the First and Second Years of the Arts Course. They are then admitted into the Faculty of Applied Science without examination. (See § IV. iv.)

Students and Graduates in Arts will be admitted to such standing in the Faculty of Applied Science as their previous studies will warrant, but are recommended to take the drawing and shop work during their Arts Course.

Candidates for examination must present themselves on the first day of examination, and all Students must attend punctually at 9 a.m. on Monday, September 23rd, when the lectures will begin.

Examinations for entrance will be held (1) on June 3rd and following days in McGill College and at local centres, and (2) on Wednesday, September 18th, and following days in McGill College only.

Any Head Master or other person desiring a local examination in June must, before May 10th, submit the name of some suitable person, preferably a University graduate, who is willing to act as Deputy Examiner, *i.e.*, receive the questions, hold the examinations, and forward the answers to Montreal. Further particulars relating to this examination will be given on application to the Secretary of the University.

SUBJECTS OF EXAMINATION.

MATHEMATICS.—*Arithmetic*—All the ordinary rules, including square root and a knowledge of the Metric System.

Algebra—Elementary rules, involution, evolution, fractions, indices, surds, simple and quadratic equations of one or more unknown quantities.

Geometry—Euclid, Bks. I., II., III., IV. and VI., with definitions of Bk. V., and easy deductions.

Trigonometry—As in Hamblin Smith, pp. 1-100, omitting Ch. XI.

ENGLISH.—*Dictation*. *Grammar* including analysis. The leading events of English History.

After entrance, one modern language, viz., FRENCH OR GERMAN must be studied. In the former subject an entrance examination

(to the beginning of Syntax, with easy translation) will be held at the same time as the other examinations. The German may be taken without previous examination.

Candidates who, in addition to the ordinary matriculation examination in English, pass an examination in the advanced portions of the English Language and Composition, may, on the recommendation of the examiner, be exempted from this subject in this Faculty.

Candidates who pass a satisfactory examination in French or German may, on the recommendation of the examiner, be exempted from such subject in this Faculty.

Candidates who pass an examination at entrance in Freehand Drawing, equivalent to the First Year examination, may, on the recommendation of the examiner, be exempted from this subject in the First Year.

Candidates who produce certificates of having already completed a portion of a course in some recognized School of Applied Science may be admitted to an equivalent standing.

PARTIAL STUDENTS.—Students may be allowed to take one or more courses of instruction, upon showing by examination or otherwise, that they are qualified to do so.

---

§ IV. EXAMINATIONS.

I. FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

1. FACULTY EXAMINATIONS.

There will be a Christmas examination for Students of the First Year in all the subjects, and for Students of the Second and Third Years in Mathematics, and in those subjects which they take in the Faculty of Arts. A sessional examination in all the subjects will be held at the end of the First and Second Years.

2. UNIVERSITY EXAMINATIONS.

(*a*) There will be a primary examination at the end of the Third Year in all the subjects of that year. Candidates must pass this Examination before entering the Final Year.

(*b*) There will be a final examination for the degree of Bachelor of Applied Science at the end of the Fourth Year, in all the subjects of that year.

Successful Students will be arranged in order of merit.

II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years standing, and must produce satisfactory certificates of having been engaged during that time upon *bona fide* work in either the Civil, Electrical, Mechanical, or Mining Branch of Engineering.

They must pass with credit an examination extending over the general theory and practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have been engaged during the three preceding years.

Candidates must present applications for examinations, together with the necessary certificates and fees. The Faculty will notify the candidates whether their certificates are satisfactory, and also of the date of the examination. (See also § V.)

III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years standing, must present certificates of having been employed during that time in some branch of scientific work, and must pass with credit an examination on the theory and practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading. (See also § V.)

IV. SPECIAL PROVISIONS FOR OBTAINING THE TWO DEGREES OF BACHELOR OF ARTS AND BACHELOR OF APPLIED SCIENCE IN SIX YEARS.

The Regulations now in force, with the following modifications, enable Students to take the two degrees of B.A. and B.A.Sc. in six years:—

1. Students who have passed the Intermediate in Arts may enter the First Year of the Applied Science Course, and will be exempted from the modern languages which they have already taken in Arts.

2. The remaining subjects required for the B. A. degree may be spread over three years instead of two.

3. The Faculty of Arts will accept the Mathematical Physics of the Applied Science Course in lieu of the Mathematical Physics of the Arts Course.

4. The Faculty of Arts will accept the Laboratory Work in Physics in lieu of the Natural Science of the Arts Course.

A certificate of Literate in Arts will be given along with the professional degree in Applied Science to those who, previous to entrance upon their professional studies proper, have completed two years in the Faculty of Arts, and have duly passed the prescribed examinations therein, but who do not wish to proceed to the degree of B.A.

---

§ V. GRADUATE COURSES.

Students who take the Bachelor's degree in one of the courses provided by the Faculty of Applied Science may graduate in any of the remaining courses by attending one or more subsequent sessions.

Graduates may also take an advanced course in the branch in which they have received their degree. On passing an examination at the end of such advanced course, the Master's degree will be conferred without further examination as soon as satisfactory certificates of having been employed for two years in practical work have been received.

Students are strongly recommended to take a Graduate Course, and special arrangements will be made for advanced and research work in the following:—

In Chemistry and Mineralogy. (See § XI., 8 and 10.)

In the determination and comparison of the errors and the co-efficients of standard length. (See § XI, 2, and § XII, 7.)

In the determination of gravity.

The elasticity and strength of materials. (See § XI, 1, and § XII, 4.)

The efficiency of pumps and hydraulic motors. (See § XI, 1, and § XII, 8.)

The efficiency of power transmission by air, water, gas, steam and electricity. (See § XI, 1, 5, 6.)

The efficiency of steam, gas, oil and hot-air engines (simple and compound) and of refrigerators. (See § XI, 6 and 9.)

The efficiency of machines and machine tools, and the power absorbed by the several processes of mechanical work. (See § XI, 6.)

The efficiency of dynamometers, belting and shafting, including investigations into the relative merits of the several unguents. (See § XI, 6.)

The efficiency of the several types of boilers, including investigations on the heat-producing power of the several fuels. (See § XI, 9.)

On the efficiency of dynamos and electric motors.

The flow of water through orifices and pipes, and over weirs. (See §XI, 1, and § XII, 8.)

In Geodesy and Practical Astronomy.

In street railway design and theory, and in alternating apparatus.

In Physics.—The McDonald Physics Building has been equipped and arranged with special reference to Graduate Courses and original research work in various branches of pure Physics. Every facility will be afforded in the workshop for the construction of special apparatus required for such investigations. (See § XI, 12.)

---

§ VI. ATTENDANCE AND CONDUCT.

The regulations under this head are in all respects the same as those in force for Undergraduates in Arts.

---

§ VII. LIBRARY AND MUSEUM.

Students in this Faculty have the same privileges with reference to the University Library and Museum as Undergraduates in Arts.

---

§ VIII. FEES.

The fees for students matriculated in the Faculty during or previous to Session 1894–95, are $102.00.

After the present date, the total fees for Undergraduates entering the First and subsequent years will be $150.00, which includes the fees for Tuition, Library, Matriculation, Graduation, Laboratories, Workshops, Gymnasium, Grounds, etc.

The Matriculation fee of $5.00 (included in the $150.00 fee) must be paid to the University Secretary previous to the examination.

Every Student will be required to deposit with the Secretary of the University the sum of $5.00, as caution money for damage done to the furniture, machinery or other apparatus.

Partial Students will be admitted to the Professional Classes in any year on payment of the ordinary fees for that year; or they may attend the lectures on any subject on payment of a special fee. The fee for each subject taken in the Arts Faculty is $4.00 per session. In all other subjects, the fee, unless otherwise specified, is $12.50 for each term, or $25.00 for the whole session.

Special Laboratory Fees.—Partial Students desirous of taking Courses in any of the several Laboratories will be required to pay a fee of $25.00 for each Course.

Special Workshop Fees.—Partial Students desirous of taking the workshop courses will be required to pay the following fees which include cost of materials and use of all tools:

1 day, or 7 hours per week for the whole Session from September to April:					$25 00
2 days, or 14	"	"	"	"	45 00
3 days, or 21	"	"	"	"	60 00
4 days, or 28	"	"	"	"	70 00

Supplemental Examination, at date fixed by Faculty $2 00
" " if for any special reason granted at any other date than that fixed by the Faculty $5 00

The fees must be paid to the Secretary, and the tickets shown to the Dean, within fourteen days after the commencement of attendance in each Session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty, and on payment of a fine of $2.

The fee for a Graduate Course is $150.00. Graduates of this Faculty will be required to pay only one-half of this amount.

Fee for the Degree of Master of Engineering or Master of Applied Science, $10.00.

If for any special reason the Degree of Ma.E., or M.A.Sc., be granted *in absentiâ*, the fee will be $25.00.

§ IX. MEDALS, EXHIBITIONS, PRIZES AND HONOURS.

1. The British Association Gold Medal and Exhibition, founded by the British Association for the Advancement of Science, in commemoration of the meeting held in Montreal in the year 1884.

The British Association Gold Medal for the Session 1895-96, or its equivalent, will be awarded in the Graduating Class.

2. The Governor General's Silver Medal (the gift of his Excellency The Right Honourable the Earl of Aberdeen).

The Medal for the Session 1895-96 will be awarded in the Graduating Class.

The following Exhibitions and Prizes will be open for competition at the beginning of the Session. *Students are required to notify the Dean of their intention to compete, at least one week before the commencement of the examinations.*

3. A British Association Exhibition of $50.00 to Students entering the Fourth Year, the subjects of examination being the Mathematics and Theory of Structures of the Ordinary Course.

4. A Scott Exhibition of $60.00, founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, to Students entering the Third Year, the subjects of Examination being :—

(*a*) An Essay, in the form of a character sketch, on Cromwell, or Napoleon I, or Bismarck. On the day of the Examination, the candidates will be required to write an essay on one of these characters. Three hours will be allowed for this. (*b*) Mathematics of the Second Year Course. (*c*) French or German of the Second Year Course.

5. Three Prizes of $25.00, $15.00 and $10.00 will be open for competition to Students entering the Second Year, the subjects of Examination being the Mathematics of the First Year course.

6. Two prizes of $25.00 each, presented by E. B. Greenshields, B.A., and P. A. Peterson, M.Inst.C.E., will be given for the best Summer Essays on engineering subjects.

N.B.—Undergraduates are strongly advised to prepare, during the Summer months, a thesis or report on some subject connected with the special course they are pursuing at the University. All prize theses must be placed in the hands of the Dean on or before the 1st of October.

7. Two prizes in books, each of the value of $12.50, presented by Alexander McFee, Esq., will be given to such members of the graduating class as shall pass the best sessional examinations in Mining and Metallurgy.

8. The Mason prize of $50.00 in Electrical Engineering, given by Dr. A. F. Mason for original investigation in the practical application of Electricity.

9. Two Prizes, each of $10.00 from the British Association Medal Fund, to Students entering the Third Year, for proficiency in Levelling or Transit Work.

10. Two prizes one of $10.00 and one of $5.00, presented by A. T. Taylor Esq., F.R.I.B.A., will be awarded to the two undergraduates taking the highest standing, in the Freehand Drawing of the First year.

11. Prizes or certificates of merit are given to such Students as take the highest place in the Sessional and Degree Examinations.

12. HONOURS.—On graduation, Honours will be awarded for advanced work in Professional subjects.

13. By the will of the late Dr. T. Sterry Hunt, F.R.S., an endowment has been provided for Scholarships in Practical Chemistry, which it is hoped will be available before the close of next session.

14. SCIENCE SCHOLARSHIPS GRANTED BY HER MAJESTY'S COMMISSION FOR THE EXHIBITION OF 1851.—These Scholarships of £150 sterling a year in value are tenable for two or, in rare instances, three years. They are limited, according to the Report of the Commission, "to those branches of Science (such as Physics, Mechanics and Chemistry) the extension of which is specially important for our national industries." Their object is, not to facilitate ordinary collegiate studies, but "to enable Students to continue the prosecution of Science with the view of aiding in its advance or in its application to the industries of the country."

A nomination to one of these scholarships for the year 1895 was placed by the Commission at the disposal of McGill University, and another may be granted in 1897.

It is open to Students of not less than three years' standing in the Faculties of Arts or Applied Science, and is tenable at any University or at any other Institution approved by the Commission.

This Exhibition has been awarded as follows :—

Evans, P. 1891. Macphail, J. A. 1893. King, R. O. 1895.

15. WORKSHOP PRIZES.— A prize of $20.00, presented by C. J. Fleet, B.A., B.C.L., for bench and lathe work in the wood-working department, open to Students of not more than two terms standing in workshop practice.

---

§ X. SPECIAL PROVISIONS.

1. Partial Students may be admitted to the professional classes upon payment of special fees. (§ VIII.)

2. Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

3. Undergraduates in Arts of the Second and Third Years, or Graduates of any University, entering the Faculty of Applied Science, may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they have previously attended as Students in Arts.

4. Students who have failed in a subject in the Christmas or Sessional Examinations may regain their standing by passing a supplemental examination at a time appointed by the Faculty. Unless such supplemental examination is passed, Students will not be allowed to proceed to any subsequent examination in the subject. A second supplemental examination will not be granted.

5. Students may be required to answer satisfactorily a weekly paper on such subjects of the course as the Faculty may determine

6. Credit will be given in the Sessional Examinations for work done during the session in certain of the subjects which will be specified at the commencement of the first term.

7. Students who fail to obtain their Session, and who in consequence repeat a Year, will not be exempted from examination in any of those subjects in which they may have previously passed, except by the express permission of the Faculty. Application for such exemption must be made at the commencement of the Session.

8. A Student may obtain a certificate of standing on payment of a fee of $2.00.

9. Certificates may be given to Students who have passed through any of the special courses attached to the curriculum.

10. The headquarters of the Canadian Society of Civil Engineers are at present in Montreal. The Society holds fortnightly

meetings, at which papers upon practical current engineering subjects are read and discussed. Undergraduates joining the Society as Students may take part in these meetings, and acquire knowledge of the utmost importance in relation to the practical part of the profession.

11. Caps and gowns, also the overalls for the workshops, may be obtained from the janitor of the Engineering Building.

---

§ XI. COURSES OF LECTURES.

1. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor:—HENRY T. BOVEY, M.INST.C.E., (Scott Professor of Civil Engineering and Applied Mechanics).
Associate Professor of Hydraulics:—H. BAMFORD, M.SC.

Lecturers:— { C. B. SMITH, MA.E.
R. S. LEA, MA.E.

THEORY OF STRUCTURES. (For Laboratory Work, see § XII.)

The lectures on this subject embrace:—

(*a*) The analytical and graphical determination of the stresses in the several members of framed structures, both simple and complex, as, *e.g.*, cranes, roof and bridge trusses, piers, etc.

(*b*) The methods of ascertaining and representing the shearing forces and bending moments to which the members of a structure are subjected.

(*c*) A study of the strength, stiffness and resistance of materials, including a statement of the principles relating to work, inertia, energy and entropy, together with a discussion of the nature and effect of the different kinds of stress and the resistance offered by a material to deformation and to blows.

(*d*) The design and proper proportioning of beams, pillars, shafts, roofs, bridge piers and trusses, arches, arched ribs, masonry dams, foundations, earth works and retaining walls.

TEXT-BOOK.—Bovey's Theory of Structures and Strength of Materials.

Graduate Course.

Special arrangements are made for advanced and research work on the nature, elasticity and strength of the several materials of construction.

RAILROAD ENGINEERING.

During the Session 1895-96 Mr. C. B. Smith, MA.E., will deliver a series of lectures on Railroad Engineering, embracing:—

(*a*) Traffic, gradients, curvature, train resistance, etc., leading up to:—

(*b*) Determination of structures required in construction.

(*c*) Laying out of work; calculation of quantities of material used in construction; specifications for same.

(*d*) Track-laying, ties (wooden and metal), ballast, steel rails and fastenings, semaphores, switches, yards, turnouts, frogs, etc., methods of signalling, telegraphic, staff, block, permissive block, etc.

(*e*) Operation and equipment, with special reference to couplers and brakes; maintenance of way, renewals, surfacing, etc.

(*f*) Résumé of Railroad law, having special reference to the duties of an Engineer.

HYDRAULICS. (For Laboratory Work, see § XII.)

The lectures deal with this subject both theoretically and with reference to its practical application.

The Student is instructed in the fundamental laws governing the equilibrium of fluids, and in the laws of flow through orifices, mouth-pieces, submerged (partially or wholly) openings, over weirs, through pipes in open channels and rivers. The impulsive action of a free jet of water upon vanes, both straight and curved, is carefully discussed, and is followed by an investigation of the power and efficiency of the several hydraulic motors, as, *e.g.*, Reaction Wheels, Pressure Engines, Vertical Water Wheels, Turbines, Pumps, etc.

Graduate Course.

Special arrangements are made for advanced and research work on the flow of water through orifices, over weirs, and on the efficiency of pumps and hydraulic motors.

PRACTICAL HYDRAULICS.

During the Session 1895-96 Mr. R. S. Lea, Ma.E., will deliver a series of practical lectures on Hydraulics, embracing quantity and quality of waters; systems and sources of supply; rainfall and evaporation; storage as related to the supplying capacity of water-sheds; natural and artificial purification; distribution, including the location of mains, hydrants, stop-valves, etc., for combined or separate fire and domestic systems; details of construction, including dams, reservoirs, pumps, etc., preliminary surveys, estimates of cost, statistics, etc.

2. SURVEYING AND GEODESY.

Professor:—C. H. MCLEOD, MA.E.

Lecturer:— ———

This course is designed to qualify the Student for admission to the practice of Provincial and Dominion Land Surveying. It also affords a practical and theoretical training in Field Engineering, Practical Astronomy, and in the simpler operations of Geodetic Engineering. The instruction is given by lectures and by practice in the field, drawing room, laboratory and observatory. The course of lectures is as follows:—

SECOND YEAR.—Chain and angular surveying. The construction, adjustment and use of the various instruments. Contour surveying. Underground surveying. Topography. Ranging curves. Levelling and setting out work.

THIRD YEAR.—Railway locations. Geodetic levelling. Indirect and Barometric levelling. Hydrographic surveying. Introduction to Practical Astronomy.

FOURTH YEAR.—Geodesy. Practical Astronomy.

Each Student in this course is required to take part in the following :—

1. A chain survey. 2. A contour survey based on 1. 3. Compass surveys with and without local attraction. 4. A plane-table survey. 5. The preliminary surveys and location of a line of road, the work being afterwards set out for construction 6. The hydrographic survey of a channel in the St. Lawrence River. 7. A triangulation survey from one base, checking on a second base. 8. The precise measurement of two base lines. 9. Differences of level by spirit level, triangulation and barometer. 10. Determinations of latitude by the zenith telescope and prime vertical methods. 11. Determination of the meridian. 12. Determinations of time by a portable astronomical transit, by sextant, and by the solar attachment. 13. Determination of longitude by the telegraphic method and by moon culminations. 14. Exercises on the comparison of clocks and chronometers. 15. Practice in the use of field magnetic instruments.

Students engaged in these surveys are expected to keep complete notes, and from them to prepare all plans and sections required. The necessary instruction in topography and mapping is given in the drawing room.

The large drawing rooms are fitted up with suitable mountings for the various instruments, in order to permit of their use and investigation during the winter months. The equipment of surveying and geodetic instruments includes :—

Six transits and transit theodolites. Seven levels. Four sextants. Two plane tables. Three surveyor's and three prismatic compasses. Three current-meters. 300 and 500 ft. steel tapes arranged for basework. An Altazimuth. A Precision Level. A Zenith Telescope. Astronomical Transits. Break-circuit Chronometer. Chronographs. Heliotropes. Hand levels, chains, rods, tapes, barometers, pedometers, and other minor instruments.

The instruction in the Observatory and Geodetic Laboratory (see § XII.) will be given in the Fourth Year.

Examinations for Land Surveyors :—Any graduate in the Faculty of Applied Science in the Department of Civil Engineering and Land Surveying may have his term of apprenticeship shortened to one year for the profession of Land Surveyor in Quebec or Ontario, or for the profession of Dominion Land Surveyor. He must, however, pass the preliminary and final examinations before one of the Boards of Examiners. The former examination should be passed before entering the University, or in the First or Second Year of attendance.

Special provisions will be made for Students who desire to pass the Examination for Dominion Topographical Surveyor.

TEXT-BOOKS :—Gillespie's Surveying, Johnson's Theory and Practice of Surveying, Shortland's Nautical Surveying, Green's Practical and Spherical Astronomy, Nautical Almanac.

Graduate Course.

Special arrangements are made for advanced and research work in Geodesy and Practical Astronomy.

3. DESCRIPTIVE GEOMETRY.

Lecturers :— C. H. McLeod, Ma.E.
C. B. Smith, Ma.E.

First Year.—Geometrical drawing, orthographic projections, including penetrations, developments, sections, etc. Isometric projection.

Second Year.—Problems on straight line and plane. Projections of plane and solid figures. Curved surfaces and tangent planes. Intersections of curved surfaces. Axometric projections. Shades and shadows. Mathematical perspective and the perspective of shades and shadows.

Third Year.—Graphical determination of spherical triangles. Spherical projections. Construction of maps.

Text-Book :—Millar's Descriptive Geometry.

4. FREEHAND AND ENGINEERING DRAWING.

Lecturer :—W. A. Carlyle, Ma.E.

This course is designed to give Students facility in observation and in sketching objects, both from the flat and from the round. Special instruction is given in sketching parts of machinery, structural work, etc.

5. ELECTRICAL ENGINEERING.

Professor :—C. A. Carus-Wilson, M.Inst.E.E., (McDonald Professor of Electrical Engineering).

Demonstrators :— L. Herdt, B.A.Sc., E.E.

The object of this course is to introduce the Student to the principles underlying the practice of Electrical Engineering. But little time is devoted to the consideration of strictly technical details, which the Student can far better study in the factory, where he is strongly recommended to go after his college course. The methods and the instruments used are, in almost every case, those that the Student will have eventually to use in practice. The object of the lectures is not to go over ground already covered by the text-books, except in cases where the subjects are not clearly put, but rather to direct the reading of the Students and to discuss problems arising out of the laboratory work.

The work in the Electrical Engineering laboratories is not commenced until the second term of the Third Year. By that time the Students will have gained a fair general acquaintance with Electricity in the Physical Laboratory. They will then begin a series of experiments on Electricity and Magnetism on a practical scale, using methods and instruments in ordinary practical use, still, however, confining their attention to the principles and not to their application.

This term's work is preparatory to that of the Fourth Year, when the Students will, in the Dynamo Room, study the practical application of these principles.

Here they will make experiments on electrical machinery of all kinds ; series, shunt, and compound dynamos ; motors, motor-generators, alternators, etc. They will be able to carry out tests of dynamos, transformers and motors under practical working conditions, not only on the apparatus in the dynamo room but also throughout the building, where there are several motors, driving lathes, fans, etc., besides an electric elevator and an electric drill. In addition to these advantages they will have the opportunity of seeing a typical lighting station of twelve hundred lights at work, and may become familiar with the best practice and design on engines, dynamos, switchboard, wiring, etc.

Graduate Course.

A special course in Electrical Engineering will be arranged for the session 1895-1896.

This course will be open to graduates in Mechanical Engineering or others who can show by examination or certificate that they are sufficiently qualified.

The course will comprise ;—

A series of lectures on Electro-Dynamics.

Work in the Electrical Engineering Laboratories, consisting of tests of generators, motors, etc.

A course of dynamo design.

6. MECHANICAL ENGINEERING.

Professor :—J. T. NICOLSON, M.CAN.SOC. C.E., (Workman Professor of Mechanical Engineering.)

Lecturer :———————

This course embraces four subjects of study, as follows :—

I. DESCRIPTIVE MECHANISM, AND KINEMATICS OF MACHINERY.

A course of lectures, illustrated by the lantern, will be given in the First Year, introducing the subject of mechanism in general to the Student. Beginning with elementary contrivances and common forms, the functions and principles of all kinds of ordinary mechanisms are explained ; and the course concludes with detailed descriptions of prime movers, machine tools, locomotives, and a few lectures on the principles of the action of cutting tools.

In the Second Year the Science of Kinematics applied to machinery is taken up. Reuleaux's principles and classifications are followed, and illustrated by the fine and unique collection of models in the Museum. The synopsis of the course includes the following subjects : Definition of a machine. Lower Pairs. Kinematic chains and trains. Centrodes. Restraint. Higher Pairs. Force and chain closure. Dead points. Notation. Analysis of the quadric crank chain, the slider-crank chain, the double-slider crank chain. Chamber crank and wheel trains Kinematic synthesis.

II. Dynamics of Machinery.

While motion without regard to force was considered in the kinematic course, the action of external forces so as to compel rest or prevent change of motion, or so as to produce or to change motion in the links of mechanisms, is now considered in a series of lectures extending over two years.

The Third Year course embraces the following :

Friction. Laws based on recent experiments, applied to journals and pivots. Railway brakes. Resistance to rolling. Friction in mechanisms treated graphically. Dynamics of belt and rope drives. Friction clutches. Elementary parts of dynamics of the steam engine, curves of crank effort for single and multiple cranks. Fluctuation of energy and of speed. Fly-wheels. Indicators. Absorption and transmission dynamometers.

Fourth Year :—Balancing of double and single acting engines and of the locomotive. Rigid dynamics applied to the connecting rod, the oscillating engine, the governor, and gyrostatic action in machinery. The inter-relation between fly-wheel and governor. Dynamics of machine tools, of pumping and of forging machines. Graphic treatment of the dynamics of complicated machines.

III. Machine Design.

In the above courses the parts of the machines considered have been supposed perfectly rigid ; their real state in this respect is considered in two courses of lectures extending over the Third and Fourth Years. The nature of the instruction is sufficiently indicated in the Text-book, which is Unwin's Machine Design, 2 vols.

IV. Mechanical Drawing.

This course extends over three years :—

Second Year :—Elementary principles of mechanical drawing. Simple machine details. Sketching of machinery. Dimensioning. Tracing and conventional colouring.

Third Year :—Making of working drawings. Simple designing. Engine designing.

Fourth Year :—Practical machine design. The complete design of a machine, such as a steam engine, a pump, a crane, a turbine, or a machine tool.

Graduate Course.

A graduate course in Mechanical Engineering has now been arranged for, and will consist of part or all of the following work :

Experimental reseaches on steam engines and boilers, hot air and gas engines, compressed air plant for power transmission, refrigerating machines ; on superheated steam, cylinder condensation, and feed heating ; and on the value of fuels.

Experiments on the relative value and properties of lubricants, on transmission and absorption dynamometers, on the efficiency of transmission machinery, and of machine tools.

Researches on the tempering and welding of various materials ; and on the properties of alloys.

7. MINING AND METALLURGY.

Lecturer:—WILLIAM A. CARLYLE, MA.E.

I. MINING.

In the Third Year, a course of lectures is given in Mining, among the subjects taken up being :—Prospecting, Exploratory Mining, Hydraulic Mining, Underground Work, Exploitation of Ore Deposits, Transport of Ores underground and at the surface, Shafts, Tunnels and Inclines or Slopes, Timbering, Pumps and Drainage, Ventilation, Hoisting Plants, Explosives and Blasting, Use of Compressed Air and Electricity in Mining, etc., etc.

II. METALLURGY.

During the Fourth Year a Course of lectures is given on :

(1) Fuels, particularly Charcoal and Coke, and on the metallurgy of Iron and Steel.

(2) On the latest and best methods of reducing the ores of such important metals as Gold, Silver, Lead, Copper and Nickel.

These lectures are illustrated by numerous models and blue-prints of the latest designs and details in Mill Work, Furnaces, etc. Each student receives copies of these blue-prints to incorporate in his lecture notes.

Draughting and Designing and the plotting of mine maps from underground surveys receive special attention.

The McGill University Mining Society meets fortnightly to hear and discuss technical papers by men eminent in the profession and by the Mining Students.

An excursion was made at the close of the Sessional Examinations, 1895, to the large copper mines at Capelton, Que., to the asbestos mines and to the slate quarries and works. Underground surveys have been made, and the methods of mining, timbering, ore-dressing, etc., carefully examined.

LABORATORIES.—Very great facilities, not equalled elsewhere in Canada, are afforded the Mining Students in the engineering laboratories and workshops. In the Testing Laboratories (XII, 4) most important instruction and experience can be obtained as to the nature and strength of the several materials of construction and in the use of the various testing machines ; while in the Hydraulic Laboratory the instructions and experiments are of great practical importance to the Mining Engineer, who is constantly called upon to apply hydraulic principles in the execution of his various works.

In the Chemical Laboratories (XII, 2) and Assay-rooms, all the work done by the student is in direct relation to the needs of his future professional duties, and the Museum (XIII.), with its large and complete collections, presents him with every opportunity for the study of Geology, Petrography, Palæontology and Mineralogy, supplementing the lectures given by the Professors in these subjects. The lectures are designed to meet the special requirements of the Mining students.

8. CHEMISTRY AND ASSAYING.

Professor :—B. J. HARRINGTON, PH.D. (Greenshields Professor of Chemistry and Mineralogy).

Lecturer :—NEVIL NORTON EVANS, M.A.Sc.

Demonstrator :—ALEXANDER BRODIE, B.A.Sc.

This course includes lectures and laboratory work. In the First Year, Students of all the Departments attend a course of lectures on the laws of Chemical Combination, Chemical Formulæ and Equations, the preparation and properties of the more important Elements and their Compounds, etc. They also devote one afternoon a week throughout the session to practical work in the Laboratory, where they learn the construction and use of ordinary apparatus, perform a series of experiments designed to cultivate the powers of observation and deduction, and begin Qualitative Analysis.

In the Second and Third Years, Students in the Department of Practical Chemistry attend lectures on the Chemistry of the metals or on Organic Chemistry, and receive instruction in Qualitative and Quantitative Analysis, including gravimetric and volumetric methods and the application of electrolytic methods to the estimation of copper, nickel, etc. Blowpipe Analysis and Determinative Mineralogy also constitute part of the work of the Third Year.

In the Fourth Year, special attention is devoted to such subjects as Mineral Analysis and Assaying, and the Analysis of Iron and Steel ; but considerable latitude is allowed to Students in the choice of subjects, and Organic work may be taken up if desired.

Students of the Mining Course take Qualitative and Quantitative Analysis during the Second and Third Years, and devote considerable attention in the Fourth Year to Mineral Analysis and Assaying of various ores, fuels, etc. They also attend the class in Blowpipe Analysis and Determinative Mineralogy in the Third Year.

The Chemical Laboratories (see § XII.) are open daily (Saturdays excepted) from 9 a.m. to 5 p.m.

9. THERMODYNAMICS.

Lecturer :—J. T. NICOLSON, B.Sc., M.CAN.SOC. C.E.

Demonstrator :— ———— —— ——

Fundamental laws and equations of thermodynamics. Application to perfect gases and to steam saturated and superheated. Efficiency of perfect heat engines. Efficiency of actual air, gas, petroleum, and steam engines.

A study of the steam engine, including wire-drawing, cylinder condensation and jacketing, and the most efficient and most economical point of cut off. Sizes and proportions of cylinders in single, double and triple expansion engines to develop a given power. Expected indicator diagrams. Sizes and proportions of the principal types of steam generators. Comparison of practical suitability of steam and caloric engines. Theory of engine and boiler testing.

TEXT-BOOK :—Ewing's "Steam-Engine."

10. GEOLOGY AND MINERALOGY.

Professors :— { B. J. HARRINGTON, PH.D.
FRANK D. ADAMS, PH.D.

SECOND YEAR.—A preliminary Course in Zoology, with special reference to Fossil Animals.

THIRD YEAR.—Mineralogy (Ordinary and Honour), Petrography, Physical and Chronological Geology and Palæontology, Geology of Canada, Methods of Geological Exploration.

FOURTH YEAR.—Special studies in Mineralogy and Petrography ; Advanced Course in General Geology and Palæontology ; Geology of Canada ; Practical Geology and Field-work.

For further details see Announcement of the Faculty of Arts.

NOTE.—Students of the Mining and Chemistry courses take the Honour Mineralogy of the Third Year in Arts. Mining Students take the whole Honour Course of the Fourth Year. Chemistry Students take, in addition to the ordinary course in Geology, the Honour Mineralogy of the Fourth Year.

11. ZOOLOGY.

Lecturer :—W. E. DEEKS, B.A., M.D.

This Course includes Elementary Physiology, Embryology, Morphology and Classification of Animals, with a general account of their habits, distribution and geological history. The lectures are supplemented by weekly demonstrations in the Redpath Museum.

12. BOTANY.

Professor :—D. P. PENHALLOW, B.SC.

Course.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of Plants. Elements of Histology.

13. EXPERIMENTAL PHYSICS.

Professors :— { JOHN COX, M.A. (McDonald Professor of Physics).
HUGH L. CALLENDAR, F.R.S. (McDonald Professor of Physics).

The instruction includes a fully illustrated course of Experimental Lectures on the general principles of Physics (embracing, in the Second Year—*The Laws of*

Energy—Heat and Light; in the Third Year—*Sound—Electricity and Magnetism*), accompanied by courses of practical work in the Laboratory in which the Students will perform for themselves experiments, chiefly quantitative, illustrating the subjects treated in the lectures. Opportunity will be given to acquire experience with all the principal instruments used in exact physical and practical measurements. Students of Electrical Engineering will continue their work in the Laboratory in the Fourth Year, when they will undertake, under the guidance of the Professors, advanced measurements and special investigations bearing on their technical studies.

FOURTH YEAR ELECTRICAL STUDENTS.—Students of Electrical Engineering will continue their work in the Physical Laboratory in the Fourth Year. The following is a brief outline of the Course :

Magnetic elements and measurements. Use of Variometers. Testing magnetic qualities of iron.

Theory and practice of absolute electrical measurements.

Comparison and use of electrical standards, of resistance, E.M.F., self-induction, and capacity.

Principles of construction of electrical instruments.

Testing and calibration of ammeters, voltmeters, and wattmeters.

Insulation and capacity tests. Electrometers and Ballistic methods.

Construction and treatment of storage cells. Testing for capacity and rate of discharge.

Electric light photometry.

An additional course on telegraph and telephone work is under consideration.

Graduate Courses.

The following are some of the sections in which special provisions have been made for advanced physical work :—

Heat.—Thermometry. Comparison and verification of delicate thermometers. Air thermometry. Measurement of high temperatures. Electrical resistance thermometers and pyrometers. Thermo-electric pyrometers. Absolute expansion of mercury.

Calorimetry. Mechanical Equivalent of Heat. Variation of specific heat with temperature. Latent heat of fusion and vaporisation. Heat of solution and combustion. Electrical methods.

Radiation and conduction of heat with special methods and apparatus. Dynamical theory of gases.

Viscosity. Surface Tension. Variation of properties with temperature.

Light.—Photometric standards. Spectrophotometry. Theory of colour vision. Spectroscopy and spectrum photography. Compound prism spectrometers. Six inch and 2½ inch Rowland Gratings. Study of spectra of gases. Fluorescence and anomalous dispersion. Polarimetry. Landolt and other polarmeters. Form of wave surface.

Sound.—Velocity in gases and various media. Absolute determinations of period. Harmonic analysis of sounds. Effects of resonance and interference.

Electricity and Magnetism.—Magnetic properties. Influence of stress and torsion. Influence of temperature. Effects of hysteresis. Magneto-optics. Other effects of Magnetisation. Diamagnetism.

Electrical standards and absolute measurements. Calibration of electrical instruments.

Insulation and capacity testing. Electrometer and Ballistic methods. Temperature variation of resistance and E.M.F. Thermo-electric effects. Electrolysis. Chemistry of primary and secondary batteries. Resistance of Electrolytes. Polarisation.

Electric discharge in gases and high vacua. Dielectric strength. Behaviour of insulators under electric stress. Specific inductive capacity. Electric oscillations. Electro-magnetic optics. Alternating currents of high frequency and voltage.

14. MATHEMATICS AND MATHEMATICAL PHYSICS.

Professor :—G. H. CHANDLER, M.A.

Lecturer :—R. S. LEA, MA.E.

The work in this department is conducted from the outset with special reference to the needs of Students of Applied Science. Much time is given to practice in the use of Mathematical Tables, particular attention being paid to the solution of triangles, the tracing of curves, graphical representation of functions, reduction of observations, etc. Areas, volumes, masses, centres of gravity, moments of inertia, etc., are determined both by calculation and by observation or experiment, and each method is made to supplement or illustrate the other. In this connection, use will be made, in actual laboratory practice, of a large amount of apparatus, such as balances, Atwood's Machines, inclined planes, chronographs, rotation apparatus of various kinds, etc. The different methods of approximation, the reduction of results of experiments and observations by least squares, etc., will also receive due attention.

The lectures will embrace the following subjects :—

FIRST YEAR.—Euclid, to the end of Book VI., with exercises on Loci, Transversals, etc. Algebra, including the Binomial Theorem. Elements of Solid Geometry and of Geometrical Conic Sections. Plane and Spherical Trigonometry. Elementary Kinematics and Dynamics.

SECOND YEAR.—Analytic Geometry. Differential and Integral Calculus. Dynamics of Solids and Fluids.

THIRD YEAR.—Continuation of Analytic Geometry, Calculus and Dynamics.

Classes may also be held for advanced (optional) work in these or other subjects.

Text-Books (Partial list).—Todhunter's or Mackay's Euclid, Hall & Knight's Elementary Algebra, Wilson's Solid Geometry and Conic Sections, Wentworth's Analytic Geometry, Chandler's Calculus, Blakie's Dynamics, Wright's Mechanics, Bottomley's Mathematical Tables, Chambers' Mathematical Tables.

15. ENGLISH LANGUAGE AND LITERATURE.

Professor:—C. E. MOYSE, B.A. (Molson Professor of English Language and Literature).

Lecturer:—C. W. COLBY, PH. D.

FIRST YEAR.—English Language and Literature.

SECOND YEAR.—A special course on English Composition.

16.—FRENCH AND GERMAN.

French Language and Literature.

Professor:—

Sessional Lecturer:—

First Year.—Jules Verne, l'Expédition de la Jeune-Hardie (D. C. Heath & Co.). Ponsard, Charlotte Corday (Macmillan & Co.). Sardou, La Perle Noire (Gage & Co.). Grammar (Whitney). Practice in Composition and Conversation.

Second Year.—Prose translation, Popular Science, edited by Jules Luquiens, Ph.D. Esther, by Racine. Précis de Littérature française, par Contanseau. Colloquial exercises.

German Language and Literature.

Lecturer:—L R. GREGOR, B.A.

First Year.—Van der Smissen and Fraser's German Grammar; Joyne's German Reader; Dictation; Colloquial exercises.

Second Year.—Van der Smissen and Fraser's German Grammar; Joyne's German Reader; Freytag Die Journalisten; Uhland, Ballads and Romances (Macmillan's Foreign School Classics); Parsing; Dictation Colloquial exercises.

Third Year.—Van der Smissen and Fraser's German Grammar; Lessing, Minna von Barnhelm; Schiller, Siege of Antwerp; History of German Literature; German Composition; Dictation.

17. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of the Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

§ XII. LABORATORIES.

In the Laboratories the Student will be instructed in the art of conducting experiments, a sound knowledge of which is daily becoming of increasing importance in professional work.

1. Laboratory of Mathematics and Dynamics.—The equipment of this Laboratory includes instruments for the measurement of distance (scales, micrometers, cathetometer), of area (planimeters), of volume (flasks, graduated vessels, etc.), of time (clocks, chronographs), of mass (beam and spring balances); it is also provided with specific gravity balances, Atwood and Morin machines for experiments on the Laws of Motion, inclined planes, a variety of rotation apparatus (gyroscope, Maxwell's Dynamical Top, torsion balance, pendulums, etc.), air-pumps, thermometers, barometers, etc.

The Mathematical Laboratory is used chiefly in connection with the course in Dynamics in the First Year. Lectures are given on the fundamental and derived units of the Science, as well as on the Laws of Motion, and deductions from the same. When the students have in this way been made acquainted with some of the ideas of the subject, they are admitted to the laboratory, where experiment of a progressive character are assigned to them. These experiments are in all cases quantitative, and embrace the measurement of mass by means of accurate physical balances, of intervals of time by clock and chronograph, and of distance by means of scales, screw micrometers, etc. They then proceed to the measurements of areas, volumes, velocities, accelerations, forces, specific gravities, friction, and also to pendulum experiments, etc. The equipment of the laboratory for this work is very complete, embracing as it does the ordinary instruments for the purpose to be found in most physical laboratories, together with a variety of apparatus specially constructed for this laboratory. Particular attention is given in the lectures to the principles of observing in general, the sources of error, etc.; the whole Course having reference to the subsequent work of the student in the Physical and Engineering Laboratories.

2. Chemical Laboratories.—The Chemical Laboratories are three in number,—one for Students of the First Year; one for Students of the Second and Third Years, in which it has been found necessary to carry on both qualitative and quantitative work; and one which is reserved for Students of the Fourth Year, and for special Students who may wish to carry on original investigations. There is also a special room in the basement which is fitted up for fire assaying.

The Laboratories are supplied with four balances by Becker & Sons, one Bunge and a bullion-balance by Trœmner. There are

also a Laurent polariscope, a spectroscope by Dubosque, gas combustion and melting furnaces, apparatus for electrolytic work, etc., etc. Distilled water is obtained by means of a special boiler placed in the basement, which also supplies the steam for drying-ovens, steam baths and drying-chamber in the upper Laboratories.

In the Chemical Laboratory much of the work has necessarily been of the ordinary routine character, but special investigations have been made of a number of processes employed in the assaying of ores. Something, too, has been added to our knowledge of the chemical composition of Canadian minerals of scientific interest ; among the minerals analyzed being sodalite, nephiline, garnet (andradite), axinite, albite, oligoclase, orthoclase, labradorite, etc. Some attention has been devoted to the chemical and mineralogical study of rocks of scientific interest from various parts of the Dominion, including sandstones, limestones, slates, gneisses, etc. Mineral and drinking waters, coals and various other economic minerals have also been made the subject of study. The work, it will be observed, has been directed mainly in the direction of mineral chemistry, as many of the laboratory students intend devoting themselves to work in connection with mining.

3. Physical Laboratory.—The McDonald Physical Laboratory contains five storeys, each of 8,000 square feet area. Besides a lecture theatre and its apparatus rooms, the Building includes an elementary laboratory nearly 60 feet square ; large special laboratories arranged for higher work by advanced students in Heat and Electricity, a range of rooms for optical work and photography ; separate rooms for private thesis work by Students ; and two large laboratories arranged for research, provided with solid piers and the usual standard instruments. There are also a lecture room, with apparatus room attached, for Mathematical Physics, a special physical library, and convenient workshops. The equipment is on a corresponding scale, and comprises : (1) apparatus for illustrating lectures ; (2) simple forms of the principal instruments for use by the Students in practical work ; (3) the most recent types of all the important instruments for exact measurement, to be used in connection with special work and research.

The following extract is made from the report for the year of the Physics Building Committee :—

The work of the year has been mainly devoted to completing the equipment of the Laboratory, and starting the practical work on a systematic basis. Additional cases, tables and other fittings have been obtained, tools and machines for the workshop, mercury stills, vacuum pumps, and other apparatus required in Experimental Physics.

Of the Advanced Practical Work, the greater part hitherto, owing to the arrangement of the Electrical Engineering course, has been confined to Electricity and Magnetism. It may be of some interest, therefore, to give a brief abstract of the work of the last year in this direction, together with a description of the principal electrical standards and instruments of precision in the McDonald Collection.

Resistance Standards.—We have thirty standard resistance coils of various patterns, including the B.A., the Board of Trade and the German, with a few others, ranging in value from 1,000 ohms to one ten-thousandth, and adapted for various different purposes. These have been tested and compared, and their values are found to agree as closely as could be expected with the Cambridge certificates, and those of the Reichsanstalt and the makers. The temperature coefficients of a few have also been determined. The comparisons have been made chiefly with Nalder's pattern of the Carey-Foster Bridge.

We have also a duplicate of the Fleming Bridge used at Cambridge, recently presented by the Duke of Devonshire.

Resistance Boxes.—The collection of resistance boxes includes almost all the best types. We have a Thomson-Varley slide-box by Nalder, which has proved extremely useful and accurate. This box has been accurately calibrated throughout. The largest discrepancy between two sets of observations on different dates and at different temperatures is one part in 50,000. The mean divergence less than 1 in 100,000. We are thus in possession of an instrument which can be used for calibrating other boxes with great ease and accuracy. Among the other boxes we may mention: two megohm boxes and four 100,000 ohm boxes of different patterns; a four dial and a six dial P.O. box; and a bar-dial box of Professor Anthony's pattern; also a compensated resistance box with mercury contacts, reading from 0 to 50 ohms continuously by the Carey–Foster method; this is extremely useful for the accurate determination of resistances which cannot be made up of any simple combination of standards, and has been accurately calibrated throughout.

For the comparison and determination of small resistances, we have a Kelvin conductivity bridge and a Lorenz apparatus, with the improvements made by Prof. V. Jones, which is now being completed under his supervision.

Potential Standards.—As potential standards, we have a number of Clark cells of Dr. Muirhead's pattern with attached thermometers, and a dozen of Professor Carhart's with his certificate. These have been frequently tested at various dates by different methods, and are found to agree with each other to about one-tenth of one per cent. The students have also set up a number of cells in accordance with the Board of Trade directions. The agreement of these is considerably closer, and though not of a portable form, they are more convenient for laboratory work.

These have been used for testing and calibrating various types of commercial instruments.

Current Standards.—We have a Kelvin composite balance, which can also be used as a voltmeter and wattmeter, and two Siemens dynamometers. The

constants of these have been determined by the voltametric method, and found to be accurate to one-half of one per cent. They have been used for calibrating common types of alternate current instruments. We have also in course of instalment a set of 4 large storage cells with convenient commutators and resistances for furnishing large steady currents for the testing of ammeters and low resistances, and for other purposes. This equipment is similar to that in use at the Board of Trade in England and in the laboratories of some leading instrument makers.

As an absolute current standard we have a duplicate of the Weber electrodynamometer made by Latimer Clark for the Committee of the British Association, the coils of which were wound by Clerk Maxwell, and used by Lord Rayleigh in his standard experiments. This instrument has been very carefully set up by R. O. King. It has been thoroughly tested and measured, and its constants determined.

Insulation and Capacity Tests.—For these and other tests we have a suitable collection of delicate reflecting galvanometers of the astatic, ballistic, differential and D'Arsonval types. The most delicate of these has a resistance of 110,000 ohms, and a figure of merit of upwards of 60,000 megohms with a 20 second swing.

We have eight quadrant electrometers of different types, the chief of which have been set up and used for various insulation and other tests. We have also one Kelvin absolute electrometer, and smaller portable electrometers and gauge on the same principle.

As a standard of capacity we have a cylindical air-condenser of the B.A. pattern. This was measured, cleaned, and set up by H. M. Tory in November, 1893.

Its capacity has not yet been determined absolutely. By comparison with our certificated mica standards, it was found to be nearly 1,200th of a microfarad, the value intended by the maker.

The mica-standards and subdivided boxes have been carefully compared with each other and tested for insulation and absorption. They are above the average in quality and accuracy.

For the purpose of studying the behaviour of insulators under the influence of long continued and intense electric stress, a subject which is now becoming of importance in connection with the transmission of power at very high voltage, we have in preparation a transformer capable of working up to 100,000 volts and of sufficient power to give useful, practical results.

Magnetic Tests.—Determinations of the dip and horizontal intensity have been made with the Kew instruments in different parts of the laboratory, and of the horizontal intensity with two other types of magnetometer. The values obtained showed a very satisfactory agreement, and were in all cases verified by the local and bifilar variometers. A preliminary magnetic survey with the portable variometers has been made of all the laboratories in which experiments affected by the horizontal intensity are carried on. The results have been of great utility, and show that the precautions taken in erecting parts of the build-

ing with copper pipes and heating apparatus were by no means unnecessary, and might even have been extended with advantage to the elementary laboratories. It was also found that the disposition of the motors and machinery at the other end of the building was such as to produce a magnetic disturbance scarcely appreciable for most purposes in the portions devoted to delicate work.

We have also apparatus of various types for testing the magnetic quality of iron and steel. These experiments are mainly carried on in the Engineering Building, but some tests have been made by the magnetometric method for which the Physics Building is more suitable.

Considerable progress has also been made with the equipment for advanced work in Optics, Acoustics and Heat, but little work has as yet been done by the Students in these branches, owing to the arrangement of the present courses of study. The collection of apparatus is on a corresponding scale to the electrical equipment, and includes several fine and valuable instruments. Among the more interesting pieces recently added or shortly to arrive, we may mention : a set of Ewing Seismographs ; a Rieffler standard clock ; a set of direct-reading electrical thermometers reading to .01 ° Fahr., which are now being used for determining soil temperatures ; a six inch Rowland grating, with mountings and accessories by Brashear ; a complete set of spectrum and Crooke's tubes by Geissler ; mechanical models and apparatus from the Engineering Laboratory and the Instrument Company at Cambridge.

We hope in the course of the summer vacation to be able to make a complete atalogue of the apparatus, and to publish some such list as shall be of use to outside students and experimentalists who may wish to know what facilities our Laboratory may offer for any particular line of research.

4. Testing Laboratories.—The principal experiments carried out in these will relate to the elasticity and strength of materials, friction, the theory of structures, the accuracy of springs, gauges, dynamometers, etc. The equipment of this laboratory includes a Wicksteed 100 ton and an Emery 75-ton machine for testing the tensile, compressive and transverse strength of the several materials of construction. To the former has been added a specially designed arrangement, by which the transverse strength of girders and beams up to 26 ft. in length can be determined. These machines are provided with the holders required for the various kinds of tests, and new holders have also been specially designed and made in the laboratory for investigating the tensile and shearing strength of timber, for wire rope tests, etc. Numerous attachments have also been made to the machines, which have largely increased their efficiency.

2. An Impact Machine, with a drop of 30 ft., and with gearing which will enable specimens to be rotated at any required speed and the blows to be repeated at any required intervals. By means of a

revolving drum, a continuous and accurate record of the deflections of the specimens under the blows can be obtained.

3. An Unwin Torsion Machine with a specially designed angle-measurer, by which the amount of the torsion can be measured with extreme accuracy.

4. An Accumulator, furnishing a pressure of 3600 lbs. per square inch, which is transmitted to the several testing machines, and ensures a perfectly steady application of stress, which is impossible when any form of pump is substituted for an Accumulator.

5. A Blake and a Worthington Steam Pump, designed to work against a pressure of 3600 lbs. per square inch. The Accumulator may be actuated by either of the pumps, and if at any time it is desirable to do so, either of the pumps may be employed to actuate the testing machine direct. When in operation the work of the pump and the accumulator is automatic.

6. Extensometers of the Unwin, Martens, Marshall and other types.

7. An autographic recording stress strain apparatus.

8. Portable cathetometers, and also a large cathetometer specially designed and constructed for the determination of the extensions, compressions and deflection of the specimens under stress in the testing machines.

9. An Electric Motor Pump for actuating the Accumulator; also various electric motors for working the several machines.

10. A drying oven for beams up to 26 ft. in length. The hot air in this oven is kept in circulation by means of a fan driven by an electric motor.

11. Numerous gauges, amongst which may be specially noticed an Emery Pressure Gauge, graduated in single lbs. up to 2500 lbs. per square inch. The whole of the testing machines are on the same pressure circuit, and are connected with the Emery Gauge and also other standard gauges, including recording gauges. This arrangement provides a practically perfect means of checking the accuracy of the testing.

12. Special apparatus and recording gauge for the testing of hose, etc.

13. Dynamometers for measuring the trength of textile fabrics the holding power of nails, etc.

14. Apparatus for determining the elasticity of long wires.

15. Apparatus for determining the hardness of materials of construction.

16. Zeiss and other Microscopes.

17. Delicate chemical and other Balances. A very important part of the equipment is the Oertling Balance, capable of indicating with extreme accuracy weights of from .00001 lb. up to 125 lbs.

18. Micrometers of all kinds.

In the laboratories more especially devoted to the determination of the strength of materials, a very extensive investigation, in which the Third and Fourth Year students have taken part, has been carried out on the strengths of certain Canadian timbers. The experiments have now extended over a period of more than two years, and the results have been incorporated in a paper. The experiments have numbered some thousands, and the value of the lumber used is upwards of $3000.00. Important results have been found in connection with what is perhaps the most valuable of the Canadian soft timbers, *i.e.*, Douglas Fir, but the experiments are still far from complete, and are to be continued.

Mr. P. A. Peterson, chief engineer of the Canadian Pacific Railway, offered a prize of $25.00 for a research to be made during Session 1894-95 by the Fourth Year students on the strength of Montreal building brick and the strength of Rockland slate.

An interesting investigation has been begun as to the strength and elasticity of iron and steel tubes under internal pressure.

CEMENT LABORATORY.—The importance of tests of the strength of mortars and cements is very great. The equipment of the Laboratory for the purpose is on a complete plan, including:—

(1) Three one-ton tensile testing machines, representing the best English and American practice.

(2) One 50-ton hydraulic compressive testing machine.

(3) Voluminometers for determining specific gravity and for determining the carbonic acid in the raw material.

(4) Faija steaming apparatus for blowing tests.

(5) Mechanical hand and power mixers.

(6) Apparatus for determining standard consistency.

(7) Vicats and Gilmore's needles for determining set.

(8) Weighing hopper, spring and other balances.

(9) Gun metal moulds for tension, compression and transverse test pieces, and special moulds for placing mortar into the moulds under a uniform pressure, which, together with the mechanical mixers enable the personal error to be eliminated.

(10) Sieves of 20, 30, 40, 50, 60, 70, 80, 100, 120 and 180 meshes per lineal inch for determining the fineness.

The laboratory is also fitted with copper-lined cisterns, in which the briquettes may be submerged for any required time, and with capacious slated operating tables, bins and tin boxes for keeping the cement dry for any period.

In the Cement Testing Laboratory, researches have been made on the strength of mortars set under pressure, the effect of frost on natural and Portland cements the effect of sugar on lime and cement mortars, the strength of lime and cement mortars and of the bricks in brick piers, the effect of fine grinding on the adhesive strength of cements, and of using hot water in mixing mortars.

In addition to these researches, a large amount of work has been done by the Fourth Year students, in investigating the specific gravity, fineness, setting properties, constancy of volume, and the tensile, compressive and transverse strengths of cements, both neat and with sand.

5. THERMODYNAMIC LABORATORY.—The Thermodynamic Laboratory is furnished with an experimental steam engine of 80 I.H.P., specially designed for the investigation of the behaviour of steam under various conditions ; there are four cylinders, which can be connected so as to allow of single, compound, triple or quadruple, expansion, condensing or non-condensing, with or without jackets. The measurements of heat are made by large tanks, which receive the condensing water and the condensed steam. There are two hydraulic absorption brakes for measuring the mechanical power developed, and an alternative friction brake for the same purpose. Besides this large steam engine, a high speed automatic cut-off by Robb-Armstrong of Amherst, N.S., an Atkinson Cycle and an Otto gas engine, a Stirling hot air engine by Woodbury Merrill of Ticonderoga, are provided and completely fitted for purposes of measurement and research. Many smaller instruments are provided or are in course of construction for illustrating the general principles of thermodynamics, such as calorimeters, delicate thermometers and gauges, a mercury column apparatus for investigating the properties of superheated steam and other working fluids draft gauges, pyrometers, fuel testers, indicators, planimeters and a Moscrop recorder.

A 40 horse power two-stage air compressor of modern make for a central station is under construction in the workshops of the College, and will, it is hoped, be added to the Laboratory during next session.

Of the five boilers which supply steam, three are fitted for experimental purposes.

The most recent addition to the equipment consists of a 45 H. P. Cornish boiler with Galloway tubes. This boiler will be used for heating and also for experimental purposes and will work up to 100 lbs. per sq. in.

In the Thermodynamic Laboratory, the cylinders of the experimental engine have been covered with non-conducting material, the cylinder drains altered, and a new set of jacket drains fitted, so that measurements of all jacket steam can now be made separately,— a unique feature in a quadruple engine. Several tests have been made with the low pressure cylinder. The experimental boiler has been mounted for forced draft trials ; two of the Babcock-Wilcox boilers have been completely fitted up for experimental work, and with them about forty full boiler trials have been carried out.

The staple experiments in the laboratory have been made with the Robb automatic cut-off engine, fifty full trials having taken place, six of them with Hirn's analysis. The Atkinson gas engine and the hot air engine have also been tested a number of times. A mass of apparatus for testing the dryness of steam (including separating, throttling and super-heating calorimeters), a steam orifice, a Penberthy injector and a fuel calorimeter have been permanently fitted up, and form, together with numerous pyrometers, indicators and springs, the subjects of the preliminary part of the Course.

A research on the transmission of heat through wrought-iron boiler tubes was carried out in the summer of 1893 by three students, and gave interesting results.

A research on the motion of heat through the walls of steam cylinders by the thermo-electric method has been commenced, and will, it is hoped, give important results.

6. Electrical Laboratories.—These consist of :—

(1) *The Electrical Laboratory proper*, where the standard instruments are kept and experiments made in the electrical course. The instruments comprise amongst others, two of Lord Kelvin's electric balances, a Thomson galvanometer, four d'Arsonval galvanometers, two Siemens dynamometers, two Kelvin electrostatic voltmeters, a complete set of Western ammeters and voltmeters, besides resistance coils, etc.

Current is supplied to all parts of the room from one of the lighting dynamos direct and from the accumulator room.

(2) *The Magnetic Laboratory*.—Here are set up a ballistic galvanometer, Ewing's curve tracer, and a variety of apparatus made in the College for magnetic tests of various kinds.

(3) *The Dynamo Room*.—The apparatus here consists of a 25 K W Edison dynamo, two 12 K W Edison dynamos, a 12 K W

Mordey alternator made specially for this laboratory (the coils on the armature can be moved round through any angle, and two or three currents of any phase difference obtained), a 7 K W Victoria dynamo, a 7 K W Fort Wayne dynamo, a 6 K W Thomson-Houston arc-light dynamo, a 15 K W Thomson-Houston incandescent dynamo, and a 5 K W Brush arc-light dynamo. All these are driven off magnetic clutch pulleys by an 80 horse power MacIntosh and Seymour engine. There are also here several different transformers, motors, arc lamps, etc., and a 3 K W motor generator.

(4) *The Lighting Station.*—This comprises a 30 K W Edison-Hopkinson dynamo, and a 30 K W Siemens dynamo, each driven by a Willans high speed engine. The switch-board is arranged so that the building—containing twelve hundred lights—can be lighted by the two dynamos in series, or, if the load is light, by one running on two-wire system or by accumulators. The whole is in every respect typical of the best English and American practice.

(5) *The Accumulator Room.*—Containing Crompton-Howell storage cells of a united capacity of eight hundred ampere hours.

During the past year, the advanced students in the Electrical Engineering Course have carried out an extensive series of experiments on different subjects of interest.

The electric elevator in the building formed the subject of an enquiry into the regulating and running of electric elevators generally, and much useful information was obtained as to the efficiency of worm gearing.

Tests of efficiency were made on transformers submitted by the makers, by a new method, which was made the subject of a demonstration to the members of the Canadian Institution of Electrical Engineers on the occasion of their visit to McGill College in the autumn.

The photometer has been used for testing the candle-power and efficiency of a large number of incandescent lamps of different types.

Several samples of iron have been sent in for magnetic experiments, and have served a useful purpose in the students' work.

The efficiency of the magnetic clutches used in the dynamo room, which were designed at the College, was determined by a series of tests; these clutches have been running for two years, and have proved perfectly satisfactory.

An extended series of experiments has been made on armature reaction on some of the dynamos in the laboratory; these are now being completed, and will, it is hoped, give valuable results.

Arrangements are now being made for establishing a street railway testing department; a standard street railway motor and other apparatus have been kindly lent by the Canadian General Electric Company for this purpose.

7. Geodetic Laboratory.—There are in this Laboratory a Rogers comparator for the investigation of standards of length, a Rogers angular dividing engine for the graduation and investigation of circles, a Munro-Rogers linear dividing engine, an astronomical clock and chronograph, a portable Bessel's reversible pendulum apparatus, a Whitworth end-measuring machine, lever triers, etc. In connection with the Laboratory, there is also a fifty-foot comparator and standard of length, for standardizing steel bands, chains, tapes, rods, etc.

The Geodetic Laboratory is used chiefly by the students of the Fourth Year in the Course of Civil Engineering. Investigations of the errors of the instruments employed in the field geodetic work are made by the class. The methods of graduating circles and standard bars are illustrated by example, and the products examined on the comparators. Measurements of the value of gravity and the magnetic element by field methods are completely carried out.

In the Astronomical Observatory each member of the class makes a series of determinations of latitude by the zenith and prime vertical methods, a set of time observations by eye and ear and by chronographic methods, and a determination of meridian, in all of which a fairly high standard of accuracy is demanded.

8. Hydraulic Laboratory.—Here the Student will study practically the flow of water through orifices of various forms and sizes, through submerged openings, over weirs, through pipes, mouth-pieces, etc.

The equipment of this laboratory includes :—

1. A large Experimental Tank, 30 ft. in height and 25 sq. ft., in sectional area. With this tank experiments are conducted on the flow of water through orifices, either free or submerged. By a simple arrangement the orifices can be rapidly interchanged without lowering the head and with the loss of only about one pint of water. The indicating and measuring arrangements connected with the tank are exceedingly delicate and accurate, and valuable results have already been obtained. By means of a special connection with the city water-supply, the available head of water may be increased up to 280 ft.

2. An Impact Machine, which renders it possible to measure the force with which water flowing through an orifice, nozzle or pipe strikes any given surface, and also the impulsive effect of the water entering the buckets of hydraulic motors.

3. A Jet Measurer specially designed for investigating the dimensions of the jet produced in the phenomena known as "the inversion of the vein." With this apparatus it is possible to determine, within .001 inch the dimensions of a jet in any plane and at any point of the path.

4. Numerous orifices, nozzles and mouth-pieces.

5. A specially designed strand-pipe with all the necessary connections for pipes of various sizes for investigations on frictional resistance. The pressures are measured by recording gauges, etc.

6. A flume about 35 feet in length, by 5 ft. in width by 3 ft. 6 ins. in depth.

7. Weirs up to 5 ft. in width, and with a depth of water over the rest varying from nil to 8 inches.

8. Numerous hydraulic pressure-gauges.

9. A mercury column 60 feet in height.

10. Gauge testing apparatus.

11. Various rotary, and piston meters and a venturi meter.

12. Apparatus for illustrating vortex motion.

13. Apparatus for illustrating vortex ring motion and for determining the critical velocity of water flowing through pipes.

14. Five specially built gauging tanks with suitable indicators, and having a capacity of 800 cubic feet. Also other portable tanks.

15. Transmission and absorption dynamometers.

16. An experimental centrifugal pump.

17. An inward-flow turbine, a new American turbine, a Pelton, and other motors and turbines.

This Laboratory is also provided with a set of pumps, specially designed for experimental work and research. They are adapted to work under all pressures up to 120 lbs. per sq. in., and at all speeds up to the highest found practicable. The set is composed of three vertical single acting plunger pumps of 7 in. diam., 18 in. stroke, driven by one shaft. They are to have two interchangeable valve chests, and it is arranged that both the valves and their seats may be removed and replaced by others.

In the Hydraulic Laboratory, investigations are being carried out on the flow of water through orifices of different sizes and forms, on the effect of viscosity upon the flow, and for the purpose of determining the co-efficients of discharge

through conical nozzles. Important results have already been obtained, and it is hoped that they will be published in the near future, so that the results may be available to the general public.

Similar experiments and also experiments on the flow of water over weirs have been directly conducted by the students, who are thus able to obtain experience in the scientific treatment of hydraulic problems, which will certainly be of the utmost value to them in their future career.

9. MECHANICAL LABORATORY.—In this Laboratory experiments will be carried out on the efficiency of belts, shafting, and machine tools. Governors of all types will be tested with the chronograph. Lubricants by journal friction-testing machine. Sliding and rolling friction and the stiffness of ropes will also form subjects for experiment.

Much valuable apparatus has been added to this laboratory since the opening of the Buildings, all of which has been made in the mechanical workshops, and mainly by students. The Thurston oil tester and the Bunte's viscosimeter, which formed the original equipment, have been supplemented by a hydraulic dynamometer for testing the efficiency of machines, a rotary transmission dynamometer on a new principle, with recording attachment, a pneumatic gauge for measuring delicate pressures down to the 3oooth of a lb. per square inch, two other draft gauges, a belt transmission dynamometer and a belt-testing apparatus

With these instruments, experiments have been carried on during each session or a period of twenty full working days.

Many visits have also been paid to engineering works and manufactories of importance.

XIII. MUSEUMS.

The Peter Redpath Museum contains large and valuable collections in Botany, Zoology, Mineralogy and Geology, arranged in such a manner as to facilitate the work in these departments. Students have access to this Museum, in connection with their attendance on the classes in Arts in the subjects above named, and also by tickets which can be obtained on application. Students will also have the use of a Technical Museum, occupying the whole of the third storey of the Engineering Building. Amongst other apparatus the Museum contains the Reuleaux collection of kinematic models, presented by W. C. McDonald, Esq., and pronounced by Professor Reuleaux to be the finest and most complete collection in America.

§ XIV. WORKSHOPS.

The workshops erected on the Thomas Workman Endowment have a floor area of more than 25,000 sq. ft.

The practical instruction in the workshops is designed to give the Student some knowledge of the nature of the materials of construction, to familiarize him with the more important hand and machine tools, and to give him some manual skill in the use of the same. For this purpose, the Student, during a specified number of hours per week, will work in the shops under the superintendence of the Professor of Mechanical Engineering, aided by skilled mechanics. The courses commence with graded exercises, and gradually lead up to the making of joints, members of structures, frames, etc., finally concluding in the iron-working department with the manufacture of tools, parts of machines, and, if possible, with the building of complete machines.

The equipment includes the following :

In the Carpenter, Wood-Turning and Pattern-Making Departments.—Carpenters' and pattern-makers' benches, wood-lathes, a large pattern-maker's lathe, circular saw benches, jig and band saws, buzz-planer, wood-borer, universal wood-worker, etc.

In the Machine Shop.—The most improved engine lathes, a 36-in. modern upright drill, with compound table, universal milling machine, with vertical milling attachment, hand lathes, planer, universal grinding machine, universal cutter and reamer grinder, buffing machine, a 16-in. patent shaper, vise-benches, etc.

In the Smith Shop.—Forges, hand drill, and a power hammer.

In the Foundry.—A cupola for melting iron, core oven, brass furnace, moulders' benches, etc.

The machinery in the shops is driven by 50 I. H. P. compound engine and a 10 I. H. P. high speed engine.

In the workshops, a 40 H.P. air compressor has formed the staple object upon which energy has been spent. This, it is hoped, will be completed and added to the Thermodynamic Laboratory during the present year. A large boring bar, with automatic feed and double heads, an Emery brass buffing machine, an overhead travelling crane of one ton capacity, with two transverse motions, in the foundry ; and two electric arc lamps and projecting lanterns, complete for class demonstration, have been the principal results of steady application in the work shops.

ADDENDUM.

Good board and lodging may be obtained at $18 per month ; or separately, board at $12 to $14, and rooms at $5 to $10 per month. The cost of drawing instruments for the whole course may be placed at from $15 to $30. Gown and overalls, $7 to $10. Books per session $10 to $30.

Estimated necessary cost per session of 7½ months, including fees, but exclusive of clothing and travelling expenses, $270 to $320.

FACULTY OF APPLIED SCIENCE—TIME TABLE.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
First Year.	9	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Shopwork.
	10	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Do
	11	English.	French. German.	French. German.	French. German.		Do
	12	Chemistry.	English.	Drawing.	Drawing.	Chemistry.	Do
	2 to	Geom. Drawing.	Shopwork.	Geom. Drawin (*a*). Mathematical Lab. (*b*).	Freeand Drawing.	Pract. Chemistry.	
Second Year.	9	Mathematics.	Mathematics.	French.	Mathematics.	French.	Shopwork, 4.
	10	Physical Laboratory.	German.	Mathematics.	Chemistry, 5. Surveying, 1, 4.	German.	Do
	11	Do	Zoology, 1, 4.	Botany, 5. Mathematics.	Zoology, 1, 4.	Mathematics.	Do
	12	Do Botany, 5.	Experimental Physics.	Kinematics, 2, 3. Surveying, 1, 4.	Experimental Physics.	Chemistry, 4, 5.	Do
	2 to 5	*Chemistry, 4, 5. Mapping, 1. Shopwork, 2, 3.	Desc. Geom., 1, 2, 3, 4, 5.	* Chemistry, 4, 5. Mechl. Drawing, 2, 3. Shopwork, 1.	Chemistry, 5. Mapping, 1, 4. Shopwork, 2, 3.	Physical Laboratory, 1, 2, 3, 5.	

* The Chemical Laboratories are open to Second, Third and Fourth Year classes daily (Saturdays excepted) from 9 a.m. to 5 p.m.
Field work during September and October, 2 to 5 p.m. For 2nd Year *Civil*, on Mondays, Tuesdays, Wednesdays, Thursdays and Fridays. For *Mining*, on Mondays, Tuesdays, Thursdays and Fridays. For 3rd Year *Civil* and *Mining*, on Mondays, Wednesdays, Thursdays and Fridays. For 4th year *Civil*, on Saturday mornings and two first clear evenings each week, 7 to 9.
(*a*) First Term. (*b*) Second Term.
1. Civil Engineering Students. 2. Electrical Engineering Students. 3. Mechanical Engineering Students. 4. Mining Engineering Students. 5. Practical Chemistry Students.

FACULTY OF APPLIED SCIENCE—TIME TABLE—*Continued.*

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
THIRD YEAR.	9	Experimental Physics, 1, 2, 3, 4, 5.	Mineralogy, (*b*), 4, 5. Surveying, (*a*), 1, 4.	Dyn. of Mach., 2, 3. Geology, 1, 4, 5.	Experimental Physics. 1, 2, 3, 4, 5.	Desc. Geom., 1. Mach. Design, 3. Mineralogy, 4, 5.	Electrical Eng. Lab., 2 (*a*). Math. Lab., (*c*), 1, 4. Testing Lab., (*b*) 1, 2, 3, 4.
	10	Dyn. of Mach., 2, 3. Geology, 1, 4, 5.	Surveying, (*b*) 1, 4. Theory of Structures, (*a*), 1, 2, 3, 4.	Desc. Geom., 1. Mining, 4. Shopwork, 2, 3.	Chemistry, 5. Machine Design, 2, 3. Railroad Eng., 1, 4.	Geology, 1, 4, 5. Mach. Design, 3.	Do
	11	Mathematics, 1, 2, 3, 4.	Theory of Structures, 1, 2, 3, 4. Zoology, 5.	Shopwork, 2, 3. Surveying, 1,4.	Mathematics, 1, 2, 3, 4. Zoology, 5.	Mining, 4. Theory of Structures, 1, 2, 3.	Do
	12	Machine Design, 2, 3. Surveying, 1, 4.	Electrical Eng., 2 (*a*). Theory of Structures, (*b*), 1, 2, 3, 4.	Shopwork, 2, 3.	Mathematics, 1, 2, 3, 4.	Theory of Structures, 1, 2, 3, 4.	Do
	2 to 5	Chemistry, 4, 5. Elect. Eng. Lab., 2 (*a*). Mapping, 1.	Chemistry, 5. Drawing, 1, 2, 3, 4. Mining, 4.	Chemistry, 4, 5. Physical Lab., 2.	Det. Mineralogy, 4, 5. Mapping, 1. Shopwork, 2, 3.	Chemistry, 5. Math. Lab., (*c*), 2, 3. Phys. Lab., (*d*, *b*) 2, 4. Thermo. Lab., 1.	
FOURTH YEAR.	9	Thermodynamics, 1, 2, 3, 4.	Dyn. of Mach., 2, 3. Mineralogy (*a*), 4, 5.	Designing, 1. Electrodynamics, 2. Geology, 5. Museum Work.	Thermodynamics, 1, 2, 3, 4	Designing, 1. Electrodynamics, 2. Metallurgy, 4, 5. Thermo. Lab., 3.	Hydraulic Lab., 1, 2, 3, 4.
	10	Hydraulics, 1, 2, 3, 4.	Mechanical Lab., 3. Metallurgy, 4, 5. Shopwork, 2.	Designing, 1. Electrical Eng. Lab., 2. Museum Work.	Hydraulics, 1, 2, 3, 4.	Elect. Eng. Lab., 2. Geodesy, 1. Thermo. Lab., 3.	Do
	11	Machine Design, 2, 3. Geodesy, 1. Geology, 4.	Designing, 4. Mechanical Lab., 3. Shopwork, 2. Theory of Structures, 1.	Designing, 1. Electrical Eng. Lab., 2. Museum Work.	Designing 4 (*a*). Dyn. of Mach., 2, 3.	Elect. Eng. Lab., 2. Geology, 4. Theory of Structures, 1. Thermo. Lab., 3.	Do
	12	Railroad Eng., 1, 4.	Designing, 4. Mach. Lab., 3. Shopwork, 2.	Designing, 1. Electrical Eng. Lab., 2. Mineralogy, 4, 5. Museum Work.	Desc. Elect. Eng, (*b*), 2, 3. Designing, 4 (*a*). Mech. Eng., 3 (*a*).	Elect. Eng. Lab., 2. Theory of Structures, 1. Thermo. Lab., 3.	Do
	2 to 5	Assaying, 4. Chemistry, 5. Designing, 1, 2, 3.	Chemistry, 5. Mechanical Lab., 3. Physical Lab., 2. Testing Lab., 1, 4.	Assaying, 4. Chemistry, 5. Designing, 1, 3. Electrical Eng. Lab., 2.	Assaying, 4. Chemistry, 5. Designing, 3. Physical Lab., 2. Testing Lab., 1.	Chemistry, 5. Designing, 4. Elect. Eng. Lab., 2. Testing Lab., 1. Thermo. Lab., 3.	

(*a*) First Term. (*b*) Second Term. (*c*) First half of first Term. (*d*) Second half of first Term.
1. Civil Engineering Students. 2. Electrical Engineering Students. 3. Mechanical Engineering Students. 4. Mining Engineering Students. 5. Practical Chemistry Students

Faculty of Medicine.

THE PRINCIPAL (*ex-officio*).

Professors.

WRIGHT,	STEWART,	BELL,
MACCALLUM,	WILKINS,	ADAMI,
CRAIK,	PENHALLOW,	BIRKETT,
GIRDWOOD,	MILLS,	ALLOWAY
RODDICK,	CAMERON,	FINLEY,
GARDNER,	BLACKADER,	LAFLEUR,
SHEPHERD,	RUTTAN,	ARMSTRONG.
BULLER,		

Dean.—R. CRAIK, M.D., LL.D.
Registrar.—R. F. RUTTAN, B.A., M.D.
Librarian.—F. J. SHEPHERD, M.D.
Director of Museum.—J. G. ADAMI, M.A., M.D.

The Sixty-Third Session of this Faculty will be opened on Tuesday, October 1st, 1895, by an introductory lecture at 3 p.m. Lectures for students of the first and second years will begin September 24th. The lectures in third year and final subjects will begin on October 2nd at the hours specified in the time-table, and will be continued for six months.

The Medical School of McGill University was founded in 1822 as the "Montreal Medical Institution," by Drs. W. Robertson, W. Caldwell, A. F. Holmes, J. Stephenson and H. P. Loedel—all of them at the time members of the staff of the Montreal General Hospital.

Although founded in 1822, yet no session of the "Medical Institution" was held until 1824, when it opened with 25 students; in 1844 the number of students in the Faculty was 50; in 1851, 64, with 15 graduates; in 1872-3, 154, with 35 graduates; in 1892-3, 315, with 46 graduates; in 1894-95, 403, with 54 graduates.

There were no sessions held during the political troubles from 1836 to 1839, and it is owing to this fact that the present is the 63rd session of the Faculty. This is in reality the 66th session of the school, which is the direct continuation of the "Montreal Medical Institution."

In 1828, the "Medical Institution" was recognized by the Governors of the Royal Institution as the Medical Faculty of McGill University. At this time the lectures were given in a building on the site of the present Bank of Montreal. Later, the school was removed to a brick building still standing near the corner of Craig and St. George streets.

In 1846, the lectures of the Faculty were given in the present central building of the University, now occupied by the Faculty of Arts. On account of the inconvenience arising from the distance of the University Buildings from the centre of the city, it was decided in 1850 to erect a Medical school building in Coté street, provided with ample accommodation for Library and Museum, and furnished with a large dissecting room and two lecture rooms; this building was occupied for the first time during the session 1851-52, and sufficed for the wants of the Faculty until 1872-73, when the present main building was provided by the Governors of the University.

In 1885, the Building in the University grounds, erected by the Governors for the use of this Faculty, was found inadequate. A new building was then added, which, at the time, afforded ample facilities for carrying out the great aim of the Faculty,—that of making the teaching of the primary branches thoroughly practical.

Owing to the larger classes and the necessity of thorough laboratory teaching, the Lecture Rooms and Laboratories added in 1885 soon became insufficient in size and equipment to meet the requirements of the Faculty.

Mr. John H. R. Molson with timely generosity came to the aid of the Faculty, and in 1893 purchased property adjoining the College grounds, and enabled the Faculty to erect new buildings and extensively alter and improve those already in use.

These buildings were completed and officially opened by His Excellency the Earl of Aberdeen, Visitor of the University, January 8th, 1895.

As will be seen on reference to the architect's plans the new buildings have been erected as an extension of the old ones towards the northwest, partially facing Carlton road, and convenient to the Royal Victoria Hospital. They connect the Pathological building acquired in 1893 with the older buildings, and comprise a large modern lecture room, capable of accommodating 450 students, with adjoining preparation-rooms and new suites of laboratories for Pathology, Physiology, Histology, Pharmacology and Sanitary Science. The laboratories, etc., in the older buildings, have been greatly enlarged and improved; the whole of the second floor has been devoted to the department of anatomy, and consists of dissecting-room, anatomical museum and bone-room, preparation rooms, Professors' and Demonstrators' rooms, and a special Lecture Room.

On the ground floor the Library and Museum have been greatly enlarged; a room forming part of the Library has been set apart as a reading-room for the use of students, where the extensive reference library of the Faculty may be consulted.

On this floor are situated also the Faculty room, the Registrar's office, the special museum for Obstetrics and Gynæcology together with Professors' rooms, etc. The chemical laboratories have been increased by including the laboratories formerly used by the department of Physiology.

In the basement are placed the janitor's apartments, cloak rooms, with numerous large lockers, the Lavatory, etc., recently furnished with the most modern sanitary fittings.

Through the great liberality of the Honorable Sir Donald A. Smith in founding the "Leanchoil Endowment," and of the citizen of Montreal, and Medical Graduates in subscribing to the "Campbell Memorial Fund," the Faculty has been enabled to conduct and maintain the teaching of the different branches in a high state of efficiency.

The Faculty is glad to be able to announce that, by the liberality of the Honorable Sir Donald A. Smith in endowing the chairs of Pathology and Sanitary Science with one hundred thousand dollars, it is able to establish these departments on a footing fully commensurate with their importance and with the advances and requirements of modern medical science.

MATRICULATION.

I. Regulations of the Faculty of Medicine of McGill University.

Every Student, before he can be enregistered as an undergraduate in Medicine, must present a certificate of having passed the Matriculation Examination of the Faculty of Medicine of this University, or of having passed some State or University examination accepted by this University.

Graduates in Arts of any recognized university, and those who have passed the Entrance Examination of a Provincial Medical Council, and thus become enregistered students in medicine of a province in Canada, are exempt from further preliminary examination.

Students from the United States, who have passed a State or University examination fully equivalent to that required by this University, may, at the discretion of the Faculty, be admitted to study without further examination.

The Matriculation Examination of this University for Medicine is held twice each year, in June and September, at the same time as that for Arts and Science. The fee for this examination is five dollars, payable on application to the Acting Secretary of the University, J. W. Brakenridge.

Papers for the June examinations will be sent to local centres on application to the Acting Secretary. An additional fee of four dollars, to meet local expenses, will be charged for such examination.

The September examinations are held just before the lectures in Medicine begin. These are held in McGill College, Montreal, only, and at these examinations alternative books in Classics will be accepted.

The subjects for examination are Classics, Mathematics and English, and one of the optional subjects as below.

Compulsory Subjects :—

Latin.—Cæsar, Bell. Gall. Books I. and II. ; Virgil, Æneid, Book I., and Latin Grammar.

Mathematics.—Arithmetic (including metric system); Algebra, to quadratic equations inclusive; Euclid's Elements, Books I., II., III.

English. –Writing from Dictation. A paper on English Grammar, including Analysis. A paper on the leading events of English history. Essay on a subject to be given at the time of the examination.

Optional Subjects :—

(*One only of these subjects is required.*)

1. *Greek.*—Xenophon, Anabasis, Book I.; Greek Grammar.
2. *French.*—Le Bourgeois gentilhomme and French Grammar.
3. *German.*—The first eighty pages of Joyne's German reader or equivalent and German grammar.
4. *Chemistry.*—(As in Remsen's Elements of Chemistry, pages 1-160) *and Physics* (Gage and Fessenden's High School Physics).

II. Regulations governing the Preliminary Examinations of Canadian and English Licensing Bodies.

Students should bear in mind the fact that no degree in Medicine from a Canadian university carries with it a legal right to practise Medicine and Surgery in Canada, or in any other British possession. Each province in Canada has its own regulations regarding Entrance Examination, etc., and license to practise is conferred only on those who have complied with the regulations of the special province as to preliminary education, duration and course of study, etc. As the curriculum of professional studies of McGill University fully meets the requirements of all the Provincial Boards, attention will be called only to the regulations regarding Preliminary Education.

Each licensing body in England and Canada dates the period of beginning the study of Medicine from the time of passing the Entrance Examination accepted by it.

It is therefore of the highest importance that intending students should select that examination in preliminary education which will be accepted by the Licensing Board of the province or country in which they intend to practise their profession.

A. *To obtain a license to practise in England, India, or any other British Possession (Canada excepted).*

The Matriculation Examination in Medicine of this University, as described above, is accepted by the General Medical Council of Great Britain and Ireland. Graduates of this University desiring to enregister in England are thus exempted from any examination in preliminary education on production of the McGill Matriculation certificate together with a certificate that all the subjects of this Examination were passed at one time. Certificates of this University for attendance on lectures are also accepted by the General Medical Council.

B. *To obtain a license to practise in the Province of Quebec.*

No University Matriculation Examination is accepted by the College of Physicians and Surgeons of this Province. Graduates in Arts of any British or Canadian University are however exempted from examination, on presentation of their Diplomas.

Those who pass the Preliminary Examination described below, or Graduates in Arts who enregister as students in the C. P. & S., Quebec, on beginning their studies in Medicine, obtain, on graduating from McGill University, a license to practise in Quebec without further examination in any professional subject.

The requirements for this examination are :

LATIN.—Cæsar's Commentaries, Bks. I., II., III., IV. and V.—Virgil's Æneid, Bks. I. and II.—The Odes of Horace, Bk. III., with a sound knowledge of the Grammar of the Language.

ENGLISH.—For *English-speaking* candidates.—A critical knowledge of one of Shakespeare's plays, viz., Anthony and Cleopatra for 1895, with English Grammar, as in Dr. Smith or Mason.

For *French-speaking* candidates.—Translation into French of passages from the first eight Books of Washington Irving's Life of Columbus, with questions of Grammar. Translation into English of extracts from Fénélon's Télémaque.

FRENCH.—For *French-speaking* candidates.—A critical knowledge of Molière's Le Bourgeois Gentilhomme, Fénélon's Aventures de Télémaque and La Fontaine's Fables, Books I., II., III., with questions of Grammar and Analysis.

For *English-speaking* candidates.—Translation into English of passages from Fénélon's Télémaque, with questions of Grammar. Translations into French of easy English extracts.

BELLES LETTRES AND RHETORIC.—Principles of the subject as in Haven's Rhetoric, or Boyd's Rhetoric and Literary Criticism. History of the Literature of the age of Pericles in Greece, of Augustus in Rome, and of the 17th and 18th centuries of England and France.

HISTORY.—Outlines of the History of Greece and Rome, with particular knowledge of the History of Britain, France and Canada.

GEOGRAPHY.—A general view, with particular knowledge of Britain, France and North America.

ARITHMETIC.—Must include Vulgar and Decimal Fractions, Simple and Compound Proportion, Interest and Percentages, and Square Root.

ALGEBRA.—Must include Fractions and Simultaneous Equations of the First Degree.

GEOMETRY.—Euclid, Books I., II., III. and VI., or the portion of plane Geometry covered by those Books. Also the measurement of the lines, surfaces and volumes, of regular geometrical figures.

CHEMISTRY.—Outlines of the subject as in Wartz or Roscoe's Elementary Chemistry.

BOTANY.—Outlines as in Laflamme or Spotlore's text-book.

PHYSICS.—Outlines as in Peck-Ganot's Physics.

PHILOSOPHY.—Elements of Logic as in Jevon's Logic; Elements of Philosophy, as in Calderwood's Hand-book.

The Examinations will be held in September, 1895, at Quebec, and in July, 1896, at Montreal. (See Almanac at front of this Calendar for exact date of examinations.) Applications to be made to Dr. Brosseau, Montreal, or Dr. Belleau, Quebec, either of whom will furnish schedule giving text-books and percentage of marks required to pass in each subject.

Examination Fee, 20 dollars. Should the candidate be unsuccessful, one-half of the fee will be returned.

Of the four years' study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College, or Incorporated School of Medicine, recognized by the "Provincial Medical Board." The first session must be attended during the year immediately succeeding the Matriculation Examination, and the final session must be in the fourth year.

C. *To obtain a license to practise in Ontario.*

To become an enregistered student of Medicine of the C. P. & S. Ontario, it is necessary to hold a degree in Arts of a recognized Canadian or British University, or to pass, before beginning the study of Medicine, the prescribed examination in Preliminary Education. This Examination is the University Departmental Matriculation Examination of the Ontario Education Department, with science added and compulsory.

The subjects of this Examination for 1895 and 1896 are:—

LATIN.—A paper on Latin Grammar.

Translation from English into Latin Prose, involving a knowledge of Bradley's Arnold's Exercises, 1-24 inclusive, and 49-65 inclusive.

Translation, with the aid of a vocabulary, of easy passages from unspecified Latin Authors.

1895. { VIRGIL, Æneid, II.
CÆSAR, Bellum Gallicum, V, VI.

1896. { VIRGIL, Æneid, III.
CÆSAR, Bellum Gallicum, V, VI.

MATHEMATICS.—Arithmetic.

Algebra. (Elementary rules; easy factoring; highest common measure; lowest common multiple; square root; fractions; ratio; simple equations of one, two and three unknown quantities; indices; surds; easy quadratic equations of one and two unknown quantities.

Euclid, Books I, II, III.

HISTORY AND GEOGRAPHY.—Great Britain and her colonies, from the revolution of 1688 to the peace of 1815, and the Geography relating thereto.

Outlines of Roman History to the death of Augustus, and the Geography relating thereto.

Outlines of Greek History to the battle of Chæronea, and the Geography relating thereto.

ENGLISH.—1. Composition:—Nothing but an essay will be required; this shall be dealt with, rather as a test of the candidate's knowledge of English composition than as a proof of his knowledge of the subject written upon. Legible writing, and correct spelling and punctuation will be regarded as indispensable, and special attention will be paid to the structure of sentences and

paragraphs. The examiner will allow a choice of subjects, some of which must be based on the following selections, with which the candidate is expected to familiarize himself by careful reading :—

1895. { SCOTT, Kenilworth.
GOLDWIN SMITH, Cowper (English Men of Letters Series).

2. Grammar and Rhetoric :—The examination will be chiefly on passages not prescribed. A liberal choice of questions will be allowed to the candidate.

3. Poetical Literature :—Intelligent comprehension of and familiarity with the prescribed texts will be required :

1895. *Tennyson :*—Recollections of the Arabian Nights, The Poet, The Lady of Shallott, The Lotus Eaters, Mort D'Arthur, The Day Dream, The Brush, The Voyage, The Holy Grail.

1896. *Coleridge :*—The Ancient Mariner.

Longfellow :—Evangeline, A Gleam of Sunshine, The Day is done, The Old Clock on the Stairs, The Fire of Driftwood, Resignation, The Ladder of St. Augustine, A Psalm of Life, The Builders, The Warden of the Cinque Ports.

The following selections from Palgrave's Golden Treasury :

Wordsworth :—The Education of Nature, A Lesson, To the Skylark, To the Daisy, and the following Sonnets : To a Distant Friend, "O Friend ! I know not which way I must look," "Milton ! Thou shouldst be living at this hour," To Sleep, Within King's College Chapel.

Campbell :—"Ye Mariners of England," Battle of the Baltic, Hohenlinden, The River of Life.

Coleridge :—Youth and Age.

PHYSICS.—An Experimental course in (*a*) Dynamics, (*b*) Heat, (*c*) Electricity, including an acquaintance with the Metric System of units. The courses are defined as follows :—

Dynamics : Definitions of velocity, acceleration, mass, momentum, force, moment, couple, energy, work, centre of inertia ; statement of Newton's laws of motion : composition and resolution of forces ; conditions for equilibrium of forces in one plane.

Definitions of a fluid, fluid pressure at a point, transmission

of fluid pressure, resultant fluid pressure, specific gravity, Boyle's law, the barometer, air pump, water pump, siphon.

Heat: Effects of heat, temperature, diffusion of heat, specific heat, latent heat, law of Charles.

Electricity: Voltaic cell, chemical action in the cell, magnetic effect of the current, chemical effect of the current, galvanometer, voltameter, Ohm's law, heating effect of the current, electric light, current induction, dynamo and motor, electric bell, telegraph, telephone.

CHEMISTRY.—Definition of the object of the science, relations of the physical sciences to Biology, and of Chemistry to Physics, Chemical change, elementary composition of matter. Laws of combination of the elements, atomic theory, molecules. Avogadra's Law. The determination of atomic weight, specific heat, nomenclature, classification. The preparation, characteristic properties, and principal compounds of the following elements: Hydrogen, Chlorine, Bromine, Iodine, Oxygen, Sulphur, Nitrogen, Phosphorus, Carbon, Silicon.

FRENCH.—Grammar. Composition: (*a*) Translation into French of short English sentences as a test of the candidate's knowledge of grammatical forms and structure, and the formation in French of sentences of similar character; and (*b*) translation of easy passages from English into French.

Translation of easy passages from unspecified French authors. An examination on the following texts:

1895. { SARDOU, La Perle Noire (Pomance). / DE MAISTRE, Voyage autour de ma chambre.

1896. { ENAULT, Le Chien du capitaine. / FEUILLET, La Fée.

The Fee for this examination is $20.00. Full details may be obtained by application to Dr. R. A. Pyne, Registrar, cor. Bay and Richmond sts., Toronto.

D. *To practise in the Maritime Provinces.*

The examination required by the Faculty of Medicine is accepted in the provinces of Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland.

Special matriculation examinations are held annually in New Brunswick and Nova Scotia, at dates stated in the Almanac, at the beginning of this Calendar.

§ II.—ENREGISTRATION.

The following are the University Regulations :—

All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty.

The said Register shall be closed on the last day of October for 3rd and 4th year students, and on the 11th of October for the first and second year students. Fees are payable to the Registrar, and must be paid in advance at the time of enregistration.

The class tickets for the various courses are accepted as qualifying candidates for examination before the various Colleges and Licensing bodies of Great Britain and Ireland, and the College of Physicians and Surgeons of Ontario. The degree in Medicine of this University carries with it at the Licensing Boards of Great Britain the same exemptions in certain subjects as are granted to all colonial degrees.

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of " Doctor of Medicine and Master of Surgery," in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec, provided the graduate from this University matriculated before the College of Physicians and Surgeons of Quebec, when entering on the study of Medicine.

Any graduate therefore in Medicine of the University may obtain a license to practise in the Province of Quebec without further examination, if he has complied with the above regulations.

TIME TABLE FOR SESSION 1895-96.

Time Tables for the Session of 1895-96 will be issued with the Lecture Room ticket on enregistration.

TIME TABLE OF FIRST YEAR LECTURES.

LECTURES.	Monday	Tues.	Wed.	Thurs.	Frid.	Sat.	Lecture Theatre.
Anatomy	9	9	9	9	9	.....	No. I.
Physiology	.....	4	.....	4	.....	.....	No. I.
	4	.....	.....	.....	.....	.....	No. II.
Chemistry	.....	3	.....	3	3	.....	Autumn and Spring term No. III.
	.....	.....	2	.....	2	.....	Winter term No. III
Botany during spring term	at 9 a.m						
Prac. Anatomy	10–12	10–12	10–12	10–12	10–12	9–12	
Prac. Physiology	.....	.....	3–5	.....	.....	.....	
*Prac. Histology	2–4	.....	.....	.....	4–6	9–11	
†Prac. Chemistry	10–12	10–12	10–12	10–12	.....	.....	

* Class taken in divisions.
† Class taken in divisions during spring term.

TIME TABLE FOR SECOND YEAR.

LECTURES.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Lecture Theatre.
Anatomy	9	9	9	9	9	.....	No. I.
Physiology	2	2	2	2	.....	.....	No. I.
Chemistry	3	3	3	3	3	.....	Autumn Term No. II Winter Term No. III
Pharmacology and Therapeutics	4	.....	4	.....	4	.....	No. I.
Laboratory Work							
Anatomy	a.m. 10–12 p.m. 8–10	a.m. 10–12 p.m. 8–10	a.m. 10–12 p.m. 8–10	a.m. 10–12 p.m. 8–10	a.m. 10–12 p.m. 9–10	9–12	
* Prac. Chemistry	10–12	10–12	10–12	10–12	10–12	9–11	
† Prac. Physiology	.....	.....	.....	.....	1–3	11–1	

* Half the class each day during autumn term.
† Half the class only,

TIME TABLE OF THIRD YEAR LECTURES (for 9 months).

LECTURES.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Lecture Theatre.
Gynæcology		9					II.
Obstetrics				9			II.
Medicine	5		5		5		III.
Surgery	4		4		4		III.
Jurisprudence and Mental Diseases		5		5			II.
Pharmacology and Therapeutics		4		4			III.
General Pathology	10			10			III.
Hygiene	9						III.
Morbid Anatomy						9	III.
Clinical Medicine		1				1	M.G.H.
			1	1			R.V.H.
Clinical Surgery		11			11		M.G.H.
	2			2			R.V.H.
Prac. Pathology			9–11		9–11		Path. lab.
Clin. Chemistry	(Optional during spring term.)						Chem. lab.

TIME TABLE OF FOURTH YEAR LECTURES.

LECTURES.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Lecture Theatre.
Gynæcology					9		II.
Obstetrics	9		9				II.
Medicine	5		5		5		III.
Surgery	4		4		4		III.
*Out-Patients Clinics			11			11	M.G.H.
Clinical Medicine		2			2		R.V.H.
	11–1			11–1			M.G.H.
Clinical Surgery		11–1			11–1		M.G.H.
	2			2			R.V.H.
Special Med. and Surg. Pathology		9					III.
Ophthalmology				4			II.
*Clinical Ophthalmology	3		3				M.G.H.
		3			3		R.V.H.
†Gynæcological Clinics		3		3			M.G.H.
	3			3			R.V.H.
Gynæcological Operations			10				R.V.H.
Morbid Anatomy						9	III.
Clinical Obstetrics						1	Maternity Hospital.
Dermatological Clinic			2				M.G.H.
Genito-Urinary Clinic						3	R.V.H.

* In groups of ten. † In groups of four.

§ III.—COURSES FOR B.A. AND M.D. IN SIX YEARS.

By special arrangement with the Faculty of Arts, it is now possible for students to obtain the degree of B.A. along with M.D., C.M., after only six years of study.

It has been decided to allow the Primary subjects (Anatomy, Physiology and Chemistry) in Medicine to count as subjects of the third and fourth years in Arts (See Faculty of Arts.) It follows then that at the end of four years study a student may obtain his B.A. degree and have two years of his Medical course completed.

The remaining two years of study are devoted to the third and fourth year subjects in Medicine.

The special provisions for Medical Students in the Arts course are as follows:

In the First Year.—Instead of the Chemistry appointed, a Medical Student may substitute one half of the Course in Chemistry required of students in the First Year of the Medical Faculty.

(NOTE.—Should, in the future, the Chemistry in the Faculty of Arts be made equivalent to that of the Faculty of Medicine, it may be taken by any Student proceeding to the Medical Degree in lieu of the course in the Medical Faculty.)

In the Second Year.—The remaining half of the Course in Chemistry of the Medical Faculty may be substituted for the Psychology of the First Term and the Mathematical Physics of the Second Year. The Botany Course of the Medical Faculty may be substituted for the Botany in the Arts Course.

(NOTE.—The Faculty of Medicine advises Medical Students who are following the Courses in Arts prescribed for the two degrees to take the subject of Psychology if possible.)

Third Year.—Physiology and Histology with practical work therein, or Anatomy with Practical Anatomy, together with the regular examinations therein in the Faculty of Medicine, may be substituted for two courses under the heading of "Science" in the curriculum of the Third Year in Arts.

(NOTE.—If a special course of Physics for Medical Students should be established, Natural Philosophy may not be compulsory.)

Fourth Year.—Students who have completed the Third Year in Arts and First Year in Medicine shall have the same privileges in the Fourth Year as Honour Students in this year, viz., they shall be required to attend two only of the courses of lectures given in the ordinary departments (or one course with the additional course therein), and to pass the corresponding examinations only at the Ordinary B.A. Examination. These courses should for Medical Students be in either Languages or Literature.

Students are recommended in the Third and Fourth Years to continue the study of subjects which they have already taken in the First and Second Years.

In order to obtain the above privileges, the student must give notice at the commencement of the Session to the Dean of the Faculty of Arts, of his intention to claim them, and present a certificate from the Registrar of the Medical Faculty that his name is entered on the books of that Faculty. He must produce at the end of the sessions in the first two years a certificate of attendance on the required

lectures and of standing at the corresponding examinations. In the Third and Fourth Years, he must produce certificates that he has completed each year of the Medical curriculum.

A certificate of Literate in Arts (L. A.) will be given along with the professional degree in Medicine to those who, previous to entrance upon their profesional studies proper, have completed two years in the Faculty of Arts, and have duly passed the prescribed examinations therein.

§ IV.—GRADUATE AND ADVANCED COURSES.

The Faculty of Medicine intends in 1896 to establish Graduate and special courses in connection with the Montreal General and Royal Victoria Hospitals and the various Laboratories.

There will be two distinct sets of courses: one, a short practical and clinical course for medical men in general practice who desire to keep in touch with recent advances in Medicine, Surgery and Pathology, and who wish special clincal experience in Gynæcology, Ophthalmology, Laryngology, etc. This course will last a month from about the 20th of April to the 20th of May, 1896.

A special detailed programme will be prepared, and will be sent on application in January next.

Arrangements have also been made to accommodate a limited number of graduates who desire advanced work.

Laboratories for higher work have been equipped in connection with the pathological and clinical departments of both the Royal Victoria and Montreal General Hospitals and in connection with the General Laboratories for Pathology, Physiology and Chemistry recently altered and extended in the new University Buildings.

Young graduates desiring to qualify for examinations by advanced laboratory courses, or who wish to engage in special research, may enter at any time by giving a month's notice, stating the courses desired and the time at their disposal.

All the regular clinics and demonstrations of both Hospitals will be open to such students on the same conditions as undergraduates in Medicine of this University.

These Laboratories will be open for graduates about May 1st, 1896.

Further details regarding courses, fees, etc., may be obtained on application to the Registrar after January, 1896.

§ V.—QUALIFICATIONS FOR THE DEGREE.*

1. No one entering after September, 1894, will be admitted to the Degree of Doctor of Medicine and Master of Surgery, who shall not have attended Lectures for a period of four nine months' sessions in this University, or some other University, College or School of Medicine, approved of by this University.

* It shall be understood that the programme and regulations regarding courses of study and examinations contained in this Calendar hold good for this calendar year only, and that the Faculty of Medicine, while fully sensible of its obligations towards the students, does not hold itself bound to adhere absolutely to the conditions now laid down for the whole four years of student's course.

2. Students of other Universities so approved and admitted, on production of certificate, to a like standing in this University, shall be required to pass all Examinations in Primary and Final Subjects in the same manner as Students of the Faculty of this University.

3. Graduates in Arts who have taken two full courses in General Chemistry, including Laboratory work, two courses in Biology, including the subjects of Botany, Embryology, Elementary Physiology and dissection of one or more types of Vertebrata, may, at the discretion of the Faculty, be admitted as second-year Students, such courses being accepted as equivalent to the first year in Medicine. Students so entering will, however, not be allowed to present themselves for examination in Anatomy, until they produce certificates of dissection for two sessions.

4. Candidates for Final Examination shall furnish testimonials of attendance on the following branches of Medical Education, * viz. :—

Anatomy. Practical Anatomy. Physiology. Chemistry. Pharmacology and Therapeutics. Principles and Practice of Surgery. Obstetrics and Diseases of Infants. Gynæcology. Theory and Practice of Medicine. Clinical Medicine. Clinical Surgery.	Of which two full Courses will be required.
Medical Jurisprudence. General Pathology. Hygiene and Public Health. Practical Chemistry.	Of which one Full Course will be required.†
Botany or Zoology. Histology. Pathological Anatomy. Bacteriology. Mental Diseases.	Of which one Course will be required.

He must also produce Certificates of having assisted at six autopsies, of having dispensed medicine for a period of three months.

5. Courses of less length than the above will only be received for the time over which they have extended.

6. No one will be permitted to become a Candidate for the degree who shall not have attended at least one full Session at this University.

7. The Candidates must give proof by ticket of having attended during eighteen months the practice of the Montreal General Hospital or of the Royal Victoria Hospital, or of some other Hospital of not less than 100 beds, approved of by this University.

8. He must give proof of having acted as Clinical Clerk for six months in Medicine and six months in Surgery in the wards of a general hospital recognized by the Faculty, of having reported at least 10 medical and 10 surgical cases.

---

* A course in medical, surgical and topographical anatomy will be given for students qualifying for the Ontario Medical Council.

† Provided, however, that Testimonials equivalent to, though not precisely the same as, those above stated may be presented and accepted.

9. He must also give proof by ticket of having attended for at least nine months the practice of the Montreal Maternity or other lying-in-hospital approved of by the University, and of having attended at least six cases.

10. Every candidate for the degree must, on or before the 15th day of May, present to the Registrar of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Registrar of the Faculty an affirmation or affidavit that he has attained the age of twenty-one years.

11. The trials to be undergone by the Candidate shall be in the subjects mentioned in Section 4.

12. The following oath of affirmation will be exacted from the Candidate before receiving his degree :

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis.

Ego, A——B——, Doctoratus in Arte Medica, titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo :—me in omnibus grati animi officiis erga hanc Universitatem, ad extremum vitæ halitum, perseveraturum ; tum porro artem medicam caute, caste, et probe exercitaturum ; et quoad in me est, omnia ad ægrotorum corporum salutem conducentia, cum fide procuraturum ; quæ denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

13. The fee for the Degree of Doctor of Medicine and Master of Surgery shall be thirty dollars, to be paid by the successful candidate immediately after examination.

§ VI.—EXAMINATIONS.*

Frequent oral examinations are held to test progress of the Student ; and occasional written examinations are given throughout the Session.

The Pass examinations at the close of each Session are arranged as follows :—

FIRST YEAR.

Examinations in BOTANY or ZOOLOGY, HISTOLOGY, PHYSIOLOGY, ANATOMY, CHEMISTRY Theoretical and Practical.

Students who have taken one or more University courses in Botany or Chemistry before entering may be exempted from attendance and examination. Students exempted in their first year subjects are allowed only a pass standing, but may present themselves for examination if they desire to attain an honour standing.

Marks obtained in examinations in first year subjects will count for both Pass and Honours in the Primary examinations.

SECOND YEAR.

Examinations in ANATOMY, CHEMISTRY, PRACTICAL CHEMISTRY, PHYSIOLOGY, HISTOLOGY, PHARMACOLOGY and THERAPEUTICS.

* See foot note, page 124.

THIRD YEAR.

Examinations in PHARMACOLOGY and THERAPEUTICS, MEDICAL JURISPRUDENCE, HYGIENE, GENERAL PATHOLOGY, MENTAL DISEASES, CLINICAL CHEMISTRY, MEDICINE and SURGERY.

Marks obtained in third year subjects count for pass and honours in the final examinations.

FOURTH YEAR.

Examinations in MEDICINE, SURGERY, OBSTETRICS, GYNÆCOLOGY, CLINICAL MEDICINE, CLINICAL SURGERY, CLINICAL OBSTETRICS, CLINICAL GYNÆCOLOGY. CLINICAL OPHTHALMOLOGY, PRACTICAL PATHOLOGY and BACTERIOLOGY.

By means of the above arrangement a certain definite amount of work must be accomplished by the student in each year, and an equitable division is made between the Primary and Final branches.

A minimum of 50 *per cent. in each subject is required to Pass and* 75 *per cent. for Honours.*

Candidates who fail to pass in not more than two subjects of either the first or second years may be granted a supplemental examination at the beginning of the following session.

Supplemental examinations will not be granted, except by special permission of the Madical Faculty, and on written application stating reasons, and accompanied with a fee of $5.00 for each subject.

No candidate will be permitted, without special permission of the Faculty, to proceed with the work of the final year until he has passed the subjects comprised in the Primary examination.

No student will be allowed to present himself for his final examinations who has not certificates of having passed all his Primary examinations in this University.

Candidates who fail to pass in a subject of which two courses are required may, at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon. A course in Practical Anatomy will be accepted as equivalent to a third course of lectures in General and Descriptive Anatomy.

§ VII. COURSES OF LECTURES.

The Corporation of the University, on the recommendation of the Faculty of Medicine, last year consented to the extension of the courses of lectures in Medicine over a period of about nine months instead of six.

By this means, (1) The Students of the primary years have a more ample opportunity of becoming acquainted, by laboratory work, with those branches of study which form the scientific basis of their profession, and (2) the final Students will be able to derive the greatest benefit from the abundance of clinical material provided in the two Hospitals.

By this arrangement, while the actual number of didactic lectures per session will be decreased, there will be a corresponding increase in the amount of tutorial work and individual teaching in the laboratories for Chemistry, Physiology, Anatomy, Pathology and Hygiene, as well as giving more time, during the last two years of the course, for the thorough study of disease in the wards of the Royal Victoria and Montreal General Hospitals.

The Faculty expects, by thus increasing the time that the different professors, lecturers and demonstrators devote to each Student, to accomplish two very important ends: First, to do away with the injurious effects which result from attempting to condense the teaching of Medicine and Surgery into four or even five sessions of six months; Second, to give each Student a sounder and more thoroughly practical knowledge of his profession than could be obtained by attending during even five sessions of six months each.

ANATOMY.

PROFESSOR FRANCIS J. SHEPHERD.

SENIOR DEMONSTRATOR, J. M. ELDER.

DEMONSTRATOR, J. G. MCCARTHY.

ASSISTANT DEMONSTRATORS, R. T. MACKENZIE, W. E. DEEKS AND J. A. HENDERSON.

Anatomy is taught in the most practical manner possible, and its relation to Medicine and Surgery fully considered. The lectures are illustrated by the fresh subject, moist and dry preparations, sections, models and plates, and drawings on the blackboard.

Special attention is devoted to Practical Anatomy, the teaching being similar to that of the best European schools. The Dissecting Room is open from 8 a.m. to 10 p.m., the work being conducted under the constant supervision of the Professor and his staff of demonstrators. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, etc., are frequently given. Every Student must be examined *at least* three times on each part dissected, and if the examinations are satisfactory, a certificate is given. Prizes are awarded at the end of the Session for the best examination on the fresh subject. Abundance of material provided.

CHEMISTRY.

PROFESSOR, GILBERT P. GIRDWOOD.

Inorganic Chemistry is fully treated; a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration, abundant apparatus is possessed by the College.

The Chemical Laboratory will be open to the members of the class, to repeat experiments performed during the course, under the superintendence of the Professor or Lecturer.

PRACTICAL CHEMISTRY.

PROFESSOR, R. F. RUTTAN.

Laboratory instruction in Practical Chemistry is given during each of the first three years of study throughout one term.

The first year's course illustrates the general principles of chemical action and the properties of typical elements. During the second year the course will include methods of qualitative analysis and the detection of poisons. In the third year a course of clinical and sanitary chemistry will be given, in which the Student will be made familiar with the application of Chemistry to the diagnosis and prevention of disease. Special attention is directed to instructing Students in making accurate notes of his experiments and his conclusions. These notes are examined daily and criticized.

PHYSIOLOGY.

PROFESSOR, T. WESLEY MILLS.

LECTURER, W. S. MORROW.

ASSISTANT DEMONSTRATORS, { J. W. SCANE, J. D. CAMERON.

The purpose of this Course is to make Students thoroughly acquainted, as far as time permits, with modern Physiology; its methods, its deductions, and the basis on which the latter rest. Accordingly a full course of lectures is given, in which both the Experimental and Chemical departments of the subject receive attention.

In addition to the use of diagrams, plates, models, etc., every department of the subject is experimentally illustrated. The experiments are free from elaborate *technique*, and many of them are of a kind susceptible of ready imitation by the student.

Laboratory work for Senior Students:—

(1) During the first part of the Session there will be a course on Physiological Chemistry, in which the Student will, under direction, investigate food stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided.

(2) The remainder of the Session will be devoted to the performance of experiments which are unsuitable for demonstration to a large class in the lecture room, and require the use of elaborate methods, apparatus, etc., together with such as each individual student may conduct himself.

HISTOLOGY.

PROFESSOR, GEO. WILKINS.

DEMONSTRATOR, N. D. GUNN.

This will consist of a course of lectures and weekly demonstrations with the Microscope. As the demonstrations will be chiefly relied upon for teaching the Microscopic Anatomy of the various structures, the specimens under observation

will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

PHARMACOLOGY AND THERAPEUTICS.

PROFESSOR, A. D. BLACKADER.

The lectures on this subject are graded in the following manner:

During the Primary Course, attention will be directed chiefly to Pharmacology, including the important chemical and physical properties of the various drugs, and a brief consideration of their physiological action. Therapeutics will be considered only in outline. A complete museum of Materia Medica will afford the Student opportunity for making himself acquainted with the drugs themselves. During the spring session, a course of demonstrations on Practical Materia Medica and Pharmacy will be given.

During the Final Course, the Physiological Action of Drugs will be dwelt upon at length, and attention will be given to the Therapeutic Application of all Drugs and Remedial Measures. Prescription writing, and the various modes of administering drugs, will be explained and illustrated. During the Course, a series of lectures will be delivered in the theatres of the hospitals on special cases or groups of cases, illustrating important points in both General and Special Therapeutics.

MEDICINE.

PROFESSOR, JAS. STEWART.

ASSISTANT PROFESSORS, { F. G. FINLEY, H. A. LAFLEUR.

ASSISTANT DEMONSTRATORS, { G. G. CAMPBELL, W. F. HAMILTON.

While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, no opportunity is lost of illustrating and explaining the *general laws* of disease. With the exception of certain affections seldom or never observed in this country, all the important internal diseases of the body, except those peculiar to Women and Children, are discussed, and their Pathological Anatomy illustrated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Demonstrator of Morbid Anatomy.

The College possesses an extensive series of Anatomical plates, illustrative of the Histological and Anatomical appearances of disease, and the wards of the General Hospital afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes, and to give the results of treatment.

CLINICAL MEDICINE.

PROFESSOR, JAS. STEWART.

ASSISTANT PROFESSORS, { F. G. FINLEY. / H. A. LAFLEUR.

The instruction in Clinical Medicine is conducted in the theatres, wards, out-patient rooms and laboratories of the Royal Victoria and Montreal General Hospitas.

The courses include:—

I. The reporting of cases by every member of the Graduating Class. A certain number of beds being assigned to each student.

II. Bedside instruction for members of the Graduating Class.

III. Two Clinics weekly in each hospital.

IV. Tutorial instruction for the Junior Classes, in the wards and out-patient rooms of both hospitals.

V. Instruction in Clinical Chemistry and Bacteriology.

SURGERY.

PROFESSOR, THOMAS G. RODDICK.

DEMONSTRATOR, R. C. KIRKPATRICK.

This course consists of the Principles and Practice of Surgery and Surgical Pathology, illustrated by a large collection of preparations from the Museum, as well as by specimens obtained from cases under observation at the Hospitals. The greater part of the course, however, is devoted to the Practice of Surgery, in which attention is constantly drawn to cases which have been observed by the class during the session. The various surgical appliances are exhibited, and their uses and application explained. Surgical Anatomy and Operative Surgery form special departments of this course.

CLINICAL SURGERY.

PROFESSOR, JAMES BELL.

ASSISTANT PROFESSOR, GEO. ARMSTRONG.

ASSISTANT DEMONSTRATOR, K. CAMERON.

This course is entirely practical. Two Clinics are given weekly to full classes in the amphitheatres of each of the large general Hospitals (the Montreal General and the Royal Victoria), at which all operations are performed, the most important surgical dressings are done and the diagnosis and treatment of fractures and dislocations are illustrated by cases from the wards. Ward classes, limited to ten or twelve students, are also held weekly in each of the hospitals for bedside instruction, and every student is required to act as clinical clerk for at least six months in the surgical wards of one or the other hospital, during which period he is personally taught case taking, physical examination, etc., and is required to take part in dressing and the administration of anæsthetics.

MIDWIFERY.

PROFESSOR, J. C. CAMERON.

DEMONSTRATOR, J. D. EVANS.

The course will embrace: 1. Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, complete set of models, illustrating deformities of the pelvis, wax preparations, bronze mechanical pelvis, etc. 2. Bedside instruction in the Montreal Maternity, including the management and after-treatment of cases. 3. A complete course on obstetric operations with the phantom and preserved fœtuses. 4. The Diseases of Infancy. 5. A course of individual clinical instruction at the Montreal Maternity.

Particular attention is given to clinical instruction, and a clinical examination in Midwifery, similar to that held in Medicine and Surgery, now forms part of the final examination.

GYNÆCOLOGY.

PROFESSOR, WM. GARDNER.

ASSISTANT PROFESSOR, T. JOHNSTON ALLOWAY.

The didactic course is graded, and consists of from forty to forty-five lectures given at intervals alternating with the lectures on Obstetrics, and extending throughout the session. The anatomy and physiology of the organs and parts concerned is first discussed. Then the various methods of examination are fully described, the necessary instruments exhibited, and their uses explained.

The diseases peculiar to women are considered as fully as time permits, somewhat in the following order:—Disorders of Menstruation; Leucorrhœa; Diseases of the External Genital Organs; Inflammations, Lacerations and Displacements of the Uterus; Pelvic Cellulitis and Peritonitis and Inflammations of the Ovaries and Fallopian Tubes; Benign and Malignant growths of the Uterus; Tumors of the Ovary; Diseases of the Bladder and Urethra. The lectures are illustrated as fully as possible by drawings and morbid specimens.

Clinical teaching, including out-patient and bed-side instruction, is given both at Royal Victoria and Montreal General hospitals by Professors Gardner and Alloway. A large amount of clinical material is thus available for practical instruction in this department of medicine. Numerous operations are done before the class, and made the subject of remarks. In addition to the ward-patients each hospital conducts a large out-patient Gynæcological Clinic, to which advanced students are admitted in rotation and instructed in digital and bimanual examination and in the use of diagnostic instruments.

MEDICAL JURISPRUDENCE.

PROFESSOR, GEO. WILKINS.

LECTURER ON MENTAL DISEASES, J. W. BURGESS.

LECTURER ON MEDICO-LEGAL PATHOLOGY, WYATT JOHNSTON.

This course includes Insanity, the subject being treated of in its Medical as well as Medico-legal aspects. Special attention is devoted to the subject of blood stains, the Clinical, Microscopic and Spectroscopic tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shewn by Zeiss' Microspectroscope, so well adapted for showing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning, and classification of poisons are first treated of, after which the more common poisons are described, with reference to symptoms, post-mortem appearances, and chemical tests. The post mortem appearances are illustrated by plates, and the tests are shown to the class.

A short course of demonstrations on medico-legal Pathology also forms part of the instruction in this department. This course includes post-mortem methods in medico-legal cases, the pathological conditions characteristic of the more important forms of violent death and the natural causes of sudden death which are liable to excite suspicions of homicide. The lectures are illustrated by specimens from the Coroner's Court.

OPHTHALMOLOGY AND OTOLOGY.

PROFESSOR, FRANK BULLER.

DEMONSTRATOR, J. J. GARDNER.

This will include a course of lectures on diseases of the Eye and the Ear, both didactic and clinical. In the former, the general principles of diagnosis and treatment will be dealt with, including three lectures on the errors of refraction and faults of accommodation ; in the clinical lectures given in the hospital, cases illustrative of the typical form of ordinary diseases of the eye and ear will be exhibited and explained to the class. In the out-patient department of each hospital, Students have excellent opportunities of gaining clinical experience.

HYGIENE.

PROFESSOR, ROBERT CRAIK.

This course comprises lectures on Drinking Water and Public Water Supplies ; conditions of Soil and Water as affecting health, including Drainage and the various methods for the removal of Excreta ; the Atmosphere, including Heating and Ventilation ; Individual Hygiene, comprising the subjects of Food and

Drink; Physical Exercise and Bathing; discussion of the respective merits of he various forms of each, precautions, contra-indications, etc.; Village Sanitary Associations; Mutual Protective Sanitary Association for cities.*

BOTANY.†

PROFESSOR, D. P. PENHALLOW.

The purpose of the course is to give Students a good grounding in the principles of General Morphology, and advance their knowledge of the comparative physiology of animals and plants, and enable them to determine readily such species of plants as may come under their observation.

1. Practical morphology—the determination and classification of type specimens of Bryophytes, Pteridophytes and Spermophytes. Special facilities for this course are offered by the morphological laboratory and the resources of the Botanic Garden.

2. A course of lectures on General Morphology and Classification, Histology and Physiology. The lectures are illustrated by the models and large collections in the Peter Redpath Museum.

3. Studies in Canadian Botany. This work is prosecuted by means of field-excursions which are held as often as opportunity is afforded during the autumn months.

4. A special collection of medicinal plants, now being formed at the Gardens, offers a valuable preparation in the course of Pharmacology.

PATHOLOGY.

PROFESSOR, J. G. ADAMI.

LECTURER IN BACTERIOLOGY, WYATT JOHNSTON.

DEMONSTRATOR, C. F. MARTIN.

ASSISTANT DEMONSTRATOR, E. P. WILLIAMS.

The following courses constitute the teaching on this subject :—

1. A course of General Pathology for Students of the Third Year (optional for those of the Fourth). This course extends from October to March, lectures being delivered thrice weekly.

2. A course in Bacteriology. This, which is a continuation of the course in General Pathology, extends from April to June.

3. A course of demonstrations in the performance of autopsies, for Students of the Third Year. The demonstrations are held once a week, from October until Christmas.

4. Demonstrations upon the autopsies of the week for Students of the two Final Years. These are given during the session by Dr. Adami at the Royal Victoria Hospital, and by Dr. Wyatt Johnston at the General Hospital.

---

* Students may attend the Lectures on Sanitation in the Faculty of Applied Science,—Fee $6.

† Exemptions from Botany in the Matriculation, for Arts Students, do not entitle Students to exemptions in the First Year. Students may take in their first year either Botany or Zoology, subject, however, to the provisions of the Law in the Province in which they intend to practise medicine. Students desirous to take both subjects in one year may apply to the Faculty for permission.

5. The performance of autopsies. Each student is required to take an active part in at least six autopsies. The autopsies are conducted at the General and Royal Victoria Hospitals by the Pathologists of these Hospitals and their assistants. In addition to the actual performance of the *sectio cadaveris*, students are expected to attend the practical instruction given in connection with each autopsy, in the method of preparation and microscopic examination of the removed tissues, so as to become proficient in methods of preparation, staining and mounting.

6. A practical course in Morbid Histology for Students of the Third Year. This class is held once a week during the winter months. Six sections are as a rule distributed at each meeting of the class, so that each student obtains a large and representative series of morbid tissues, and, upon an average, twenty minutes are devoted to the description and examination of each specimen. Laboratory fee to cover cost of slides, reagents, miscroscope, etc., $5.

7. A practical course in Bacteriology with demonstrations; held once a week during the summer term. Laboratory fee, $3.

8. A course of demonstrations upon Morbid Anatomy (Museum specimens) once weekly during the winter months, for students of the Fourth Year.

In addition to the above the staff of the department give instruction to the more advanced students who desire to undertake any special work in the laboratories. In addition, classes in clinical pathology and microscopy are given from time to time, at the General and Royal Victoria Hospitals, under the direction of the Professors of Clinical Medicine. In order to encourage special study, a prize is awarded annually to the student presenting the best research in any branch of pathology.

9. A practical course of Bacteriology for advanced students. Fee $10.

In addition to the above, lectures upon Special Pathology are given by the Professor of Pathology in connection with the course in Medicine and Surgery.

ZOOLOGY.*

LECTURER, W. E. DEEKS, ARTS.

This course includes a systematic study of the classification of animals, illustrated by Canadian examples and by the collections in the Peter Redpath Museum. It forms a suitable preparation for collecting in any department of Canadian Zoology and Palæontology, and an introduction to Comparative Physiology. It may be taken instead of Botany, or along with it, without any additional fee. Students in Botany or Zoology will receive tickets to the Peter Redpath Museum and to the Museum of the Natural History Society of Montreal.

LARYNGOLOGY AND RHINOLOGY.

PROFESSOR, H. S. BIRKETT.

This course will consist of practical lessons in the use of the Laryngoscope and Rhinoscope. The instruction will be carried on with small classes, so that indi-

* See under "Botany," supra.

vidual attention may be insured. A limited number of clinical lectures bearing upon interesting cases attending the clinic will be delivered during the session. These lectures will be, however, of an eminently practical nature.

MENTAL DISEASES.

LECTURER, T. J. W. BURGESS.

This course will comprise a series of lectures at the University on Insanity in its various forms, from a medical as well as from a medico-legal standpoint. The various types of mental diseases will be illustrated by cases in the Verdun Asylum, where clinical instruction will be given to groups of senior students at intervals throughout the session.

PRACTICAL MICROSCOPY.

This is an entirely *Optional* Course, and will be conducted by Prof. Wilkins. It is intended especially for teaching the *technique* of Microscopy. Students will be shown how to examine blood, etc., also to cut, stain and mount specimens. Everything except over-glasses and cabinet cases provided. Fee $8.

§ VIII. MEDALS AND PRIZES.

1. The "Holmes Gold Medal," founded by the Medical Faculty in the year 1865, as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine; it is awarded to the Student of the graduating class who receives the highest aggregate number of marks in the different branches comprised in the Medical Curriculum.

The Student who gains the Holmes Medal has the option of exchanging it for a Bronze Medal, and the money equivalent of the Gold Medal.

2nd. The "Final Prize," a prize in Books, or a microscope of equivalent value, awarded for the best examination, written and oral, in the Final branches. The Holmes medalist is not permitted to compete for this prize.

3rd. The "Primary Prize," a prize in Books awarded for the best examination, written and oral, in the Primary branches.

4th. The "Sutherland Gold Medal," founded in 1878 by the late Mrs. Sutherland in memory of her late husband, Professor William Sutherland, M.D.; it is awarded for the best examination in Theoretical and Practical Chemistry, together with creditable examination in the Primary branches.

5th. A Prize in Books for the best examination in Practical Anatomy.

6th. A Prize in Books for the best examination in Botany.

7th. The "Clemesha Prize in Clinical Therapeutics," founded in 1889 by John W. Clemesha, M.D., of Port Hope, Ont. It is awarded to the Student making the highest marks in a special clinical examination.

§ IX. FEES.

The total Faculty fees for the whole Medical course of four full sessions, including clinics, laboratory work, dissecting material and reagents, will be four hundred dollars, payable in four annual instalments of one hundred dollars each.

Partial Students will be admitted to one or more courses on payment of special fees.

An annual University fee of two dollars is charged students of all the Faculties for the maintenance of the College athletics.

(For graduation fee, see—supra.)

All fees are payable in advance to the Registrar, and except by permission of the Faculty, will not be received later than 1st November.

It is suggested to parents or guardians of Students, that the fees be transmitted direct by cheque or P.O. Order to the Registrar, who will furnish official receipts.

§ X. TEXT-BOOKS.

ANATOMY.—Gray, Morris, Quain (Eng. ed.).

PRACTICAL ANATOMY.—Cunningham's Practical Anatomy, Holden's Dissector and Landmark's Ellis' Demonstrations.

PHYSICS.—Balfour Stewart.

INORGANIC CHEMISTRY.—Wurtz's Elementary Chemistry, Remsen's Text-Book.

ORGANIC CHEMISTRY.—Remsen.

PRACTICAL CHEMISTRY.—Odling.

PHARMACOLOGY and THERAPEUTICS.—White, Bruce, Wood, Hare, and National Dispensatory.

PHYSIOLOGY.—Foster and Shore's Physiology for Beginners, Foster's Physiology, Mills' Text-Book of Animal Physiology and Class Laboratory Exercises.

PATHOLOGY.—Coate's Pathology.

PRACTICAL PATHOLOGY.—Delafield and Prudden, Payne, Boyce.

BACTERIOLOGY.—Abbott's Bacteriology.

HISTOLOGY.—Klein's Elements, Schafer's Essentials of Histology.

SURGERY—Holmes, Moulin, Walsham, Erichsen, Treves, the American Text-Book of Surgery, DaCosta.

PRACTICE OF MEDICINE.—Osler, Strumpell, Fagge and Flint.

CLINICAL MEDICINE.—Musser's Medical Diagnosis, von Jaksch on Clinical Diagnosis.

MEDICAL JURISPRUDENCE.—Husband, Guy and Ferrier, Reese.

MIDWIFERY.—Lusk, Parvin, Playfair and Barnes.

DISEASES OF CHILDREN.—Smith, Goodhart and Starr.

GYNÆCOLOGY.—Thomas and Mundé, Skene, Garriques.

HYGIENE.—Parks, Wilson (American ed.).

BOTANY.—Gray's Text-Book of Histology aud Physiology.

ZOOLOGY.—Dawson's Handbook of Canadian Zoology.

OPHTHALMOLOGY.—Nettleship, Higgins, De Schwinitz.

OTOLOGY.—Pritchard, Dalby.

LARYNGOLOGY.—Watson, Williams, Karl Seiler.

MEDICAL DICTIONARY.—Gould, Dunglison.

§ XI. MUSEUM.

Prof. J. G. ADAMI, Director.
E. P. WILLIAMS, M.D., Assistant Curator.
M. BAILLY, Osteologist and Articulator.

For the past fifty years, the rich Pathological material furnished by the Montreal General Hospital has been collected here. The Faculty is also greatly indebted to many medical men throughout Canada and different parts of the world for important contributions to the Museum.

During the past few years, numerous and extremely important additions have been made to the Medical Museum. (See Special Announcement of the Faculty of Medicine.)

It is particularly rich in specimens of Aneurisms. In addition to containing a large number of the more common varieties of these formations, there are specimens of such rare conditions as Aneurism of the Hepatic and Superior Mesenteric Arteries, Traumatic Aneurism of the Vertebral, together with several of the Cerebral and Pulmonary Arteries. The most important collection probably in existence, of hearts affected with "Malignant Endocarditis," is also

found. The Faculty is indebted to Prof. Osler, late of this University, for this collection.

The Museum contains also a very large collection of different forms of calculi. The Faculty is mainly indebted to the late Prof. Fenwick for this collection.

During recent years, Mr. Bailly, osteologist and articulator (lately with Tramond of Paris), has been engaged in arranging and mounting the very large number of specimens of disease and injuries of bones which have been accumulating for years. In this collection are to be found examples of fractures and dislocations of the spine, osteoporosis, congenital dislocation of the hip, fracture of the astragalus, multiple exostosis, etc., etc.

Obstetrical Department of the Museum.

Besides the ordinary pathological preparations, dry and moist, usually found in Museums, this department contains a complete set of models of deformed pelves, a series of preparations in wax illustrating the normal relations of the pelvic organs, the development of the uterus and its contents during pregnancy, various abnormalities, twin pregnancy, fœtal circulation, etc., a series of colored casts of frozen sections, Tarnier's artificial pelvis, Budin's bronze mechanical pelvis, models of obstetrical instruments, etc.

Additions are being constantly made, and ere long the department will possess a complete collection of models, casts, preparations and apparatus for the practical teaching and illustration of Obstetrics.

Anatomical Museum.

In addition to the already large collection of normal and abnormal osteology, comparative and human skeletons of various classes of animals, moist preparations and frozen sections, the following preparations have been recently obtained:

(1) A series of articulated skeletons of fore and hind limbs of the various domestic animals prepared by the articulator, Mr. Bailly.

(2) Numerous moist preparations presented by the Professor and Demonstrator of Anatomy.

(3) A complete set of Steger's beautiful colored casts, taken from the celebrated frozen sections of Professors His and Braune of

Leipzig. These preparations have been placed in the Museum so that they can be constantly consulted by the Students.

(4) (*a*) A complete set of Steger's brain sections ;

(*b*) Set of hardened brains with the various lobes, convolutions, ganglia, etc., in different colors ;

(*c*) Models of the cerebro-spinal and sympathetic nervous systems ;

(*d*) A set of Prof. D. J. Cunningham's beautiful casts of the brain in situ, showing the relations of convolutions to the skull.

(5) (*a*) A set of preparations showing the anomaly of vessels entering the kidneys ;

(*b*) A number of rare anomalies of the aorta and its branches ;

(*c*) A series of preparations showing the shoulder girdle in various animals.

For additions to the Museum during the past year, see special announcement of the Faculty of Medicine.

§ XII. LIBRARY.

Prof. F. J. Shepherd.....Librarian.

Miss M. R. Charlton, Miss C. G. Forester.....Assist. Librarians.

The Library of the Medical Faculty now comprises upwards of over fourteen thousand volumes, the largest special library connected with any medical school on this continent.

The standard text-books and works of reference, together with complete files of the leading periodicals, are on the shelves. Students may consult any work of reference in the library between 10 a.m. and 5 p.m. A library reading room is provided.

§ XIII. McGILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets once a week during the spring term and fortnightly during the Winter, for the reading of papers and the discussion of medical subjects. It is presided over by a physician chosen by the members.

The Students' reading room has been placed under the control of this Society, in which the leading English and American Medical journals are on file, as well as the leading daily and weekly newspapers of the Dominion.

An extensive library of books of reference has also been established in connection with this Society.

§ XIV. COST OF LIVING, ETC.

This will, of course, vary with the taste and habits of the Student, but the necessary expenses need not exceed those in smaller towns. Good board may be obtained from $15 to $20 per month. A list of boarding houses which are inspected annually by a sanitary committee is prepared by thet Secretary of the University, and may be procured from the Janitor at the Medical College.

§ XV. HOSPITALS.

The city of Montreal is celebrated for the number and importance of its public charities. Among these its public hospitals are the most prominent and widely known. Those in which Medical students of McGill University will receive clinical instruction are :—1. The Montreal General Hospital; 2. The Royal Victoria Hospital; 3. The Montreal Maternity Hospital. The Montreal General Hospital has for many years been the most extensive clinical field in Canada. The old buildings, having proved inadequate to meet the increased demand for hospital accommodation, have recently been increased by the addition of the Campbell Memorial and Greenshields surgical pavilions and the new surgical theatre. The interior of the older buildings is now being entirely reconstructed on the most approved modern plans.

The Royal Victoria Hospital, at the head of University street, was opened for the reception of patients the first of January, 1894, and affords exceptional opportunities for clinical instruction and practical training.

Montreal General Hospital.

The main building contains an administration block and wards for general medicine, for Gynæcology and Ophthalmology, and in addition are two Surgical Pavilions.

Attached to the two new surgical pavilions, which contain over 100 beds, is a large building containing a surgical amphitheatre furnished with all the modern appliances for the carrying out of aseptic methods.

Besides the theatre, which has a seating capacity of 300, and its adjoining rooms for etherizing, for instruments and for the preparation of surgical dressings, there are on the same flat smaller operating rooms and isolation wards; commodious laboratories for clinical chemistry, bacteriology and general pathological work are provided in the basement of the Campbell Memorial wing.

A much larger number of patients receive treatment in the Montreal General Hospital than in any other Canadian hospital. Last year's report shows that between two and three thousand medical and surgical cases were treated in the wards, and the greater part of these were acute cases, as may be gathered from the fact that the average duration of residence was only 24.02 days. Upwards of thirty-two thousand patients are annually treated in the out-door department of this Hospital.

Annual tickets entitling students to admission to the Hospital must be taken out at the commencement of the Session, price $5.00. These are obtained at the Hospital. Perpetual tickets will be given on payment of the third annual fee.

The Royal Victoria Hospital.

This Hospital is situated a short distance above the University grounds, on the side of the mountain, and overlooks the city. It was founded in July, 1887, by the munificence of Lord Mount-Stephen and Sir Donald Smith, who gave half a million dollars each for this purpose, and have since endowed it with one million dollars in addition.

The buildings, which were opened for the reception of patients on the first of January, 1894, were designed by Mr. Saxon Snell of London, England, to accommodate between 250 and 300 patients.

The Hospital is composed of three massive buildings connected together by stone bridges, an administration block in the centre, and a wing on the east side for medical patients, in immediate connection with which is the new Pathological wing and mortuary, and a wing on the west side for surgical patients.

The administration block contains ample accommodation for the resident medical staff, the nursing staff and domestics. The patients' entrance, the dispensary and admission rooms also are situated in this building.

The Medical wing contains three large wards, each 123 feet long by 26 feet 6 inches wide, one ward 40 feet by 26 feet 6 inches, and twenty-one private and isolation wards averaging 16 feet by 12 feet, also a Medical Theatre with a seating capacity for 250, and rooms adjacent to it for Clinical Chemistry and other purposes.

North of this wing and in direct connection with it are the Pathological laboratories and mortuary. In this wing are situated the mortuary proper with the most modern arrangements for the preservation of cadavers, the chapel, a post mortem room capable of accommodating 200 students, and laboratories for the microscopic and bacteriological study of morbid tissues, some designed for the use of students and others for post graduation courses and special research. Laboratories for Pathological Chemistry and Photography are also provided.

The surgical wing contains three large wards each 122 feet long by 26 feet 6 inches wide, four wards each 40 feet by 32 feet, and sixteen private and isolation wards averaging 16 feet by 12 feet; also a Surgical Theatre with a seating capacity for 250, with six accessory rooms adjacent for preparation and after-recovery purposes. In this wing are the wards for Gynæcology and Ophthalmology.

CLINICAL INSTRUCTION.

During the session of 1895-96, two medical, two surgical, one gynæcological and one opthalmological clinics will be held weekly in both the Montreal General and Royal Victoria Hospitals.

Tutorial instruction will also be given in these different departments, in the wards, out-patients' rooms and laboratories.

Special weekly clinics will be given in the Montreal General Hospital on Dermatology and Laryngology, and in the Royal Victoria Hospital on diseases of the Genito-Urinary system.

CLINICAL CLERKS in the medical and surgical wards of both Hospitals are appointed every three months, and each one during his terms of service conducts, under the immediate directions of the Clinical Professors, the reporting of all cases in the ward allotted him. Students entering on and after October next will be required to show a certificate of having acted for six months as clinical clerk in medicine and six months in surgery. The experience so gained is found to be of the greatest possible advan-

tage to the Student, as affording a true *practical* training for his future professional life.

Dressers are also appointed to the Out-door Departments. For these appointments, application is to be made to the assistant surgeons, or to the resident surgeon in charge of the out-patients' department.

The large number of patients affected with diseases of the eye and ear, now attending the out-door department, will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye by the Ophthalmic Surgeon after the out-door patients have been seen, and Students are invited to attend the same, as far as practicable, to keep such cases under observation so long as they remain in the Hospital.

There are now special departments in both Hospitals for Gynæcology as well as for Ophthalmology.

The Montreal Maternity.

The Faculty have great pleasure in announcing that the Corporation of the Montreal Maternity have recently made very important additions to their building, and have still further improvements in contemplation. Students will therefore have greatly increased facilities for obtaining a practical knowledge of obstetrics. An improved Tarnier-Budin phantom is provided for the use of the Students, and every facility afforded for acquiring a practical knowledge of the various obstetric manipulations. The institution is under the direct supervision of the Professor of Midwifery, who devotes much time and attention to individual instruction. Students who have attended the course on obstetrics during the Autumn and Winter terms of the third year will be furnished with cases in rotation, which they will be required to report and attend till convalescence. Clinical midwifery has been placed upon the same basis as Clinical Medicine and Surgery, and a final clinical examination instituted. Regular courses of clinical lectures are given throughout the session. During the Autumn and

Winter terms the demonstrator of Obstetrics gives clinical demonstrations in the wards and instruction in operation work on the phantom. Students will find it very much to their advantage to pay special attention to their clinical work during the spring term of the third year and the following summer. Two resident accoucheurs are appointed yearly from the graduating class, to hold office for a period of six months each.

Fee for twelve months, $12, payable at the Maternity Hospital.

§ XVI. STUDENTS' APPOINTMENTS.

General Hospital—Five Resident Medical Officers.
Royal Victoria Hospital—Six Resident Medical Officers.
Clinical Clerk, Gynæcology.
" " Laryngology.
" " Diseases of Children.
" " Dermatology.
" " Diseases of Nervous System.
University Maternity—Two Resident Medical Officers.
Out-Door Dressers.
Dressers in Eye and Ear Departments.
Surgical Dressers (in-door).
Medical Clinical Clerks.
Post-mortem Clerks.
Student Demonstrators of Anatomy, 4 third-year Students.
Prosectors to Chair of Anatomy, 2.
Assistants in Practical Histology Course, 2.
Assistants in Practical Physiology Course, 6.
Assistants in Practical Chemistry, 6.

§ XVII. RULES FOR STUDENTS.

1. In the case of disorderly conduct, any Student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any offence against discipline after admonition by the Professor shall be reported to the Dean of the Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

2. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

3. While in the College, Students are expected to conduct themselves in the same orderly manner as in the Class-room.

When Students are brought before the Faculty under the above rules, the Faculty may reprimand, impose fines, disqualify from competing for prizes and honours, suspend from Classes, or report to the Corporation for expulsion.

Faculty of Law.

WILLIAM PETERSON, M.A., LL.D. (Oxon), Principal (Ex-Officio).
N. W. TRENHOLME, Q.C., M.A., D.C.L., ~~Dean~~, and GALE Professor of Roman and International Law.
HON. Mr. JUSTICE WURTELE, D.C.L., Professor of the Law of Real Estate.
L. H. DAVIDSON, Q.C., M.A., D.C.L., Professor of Commercial Law. Dean
CHRISTOPHE A. GEOFFRION, Q.C., D.C.L., Professor of the Law of Contracts.
ARCHIBALD MCGOUN, M.A., B.C.L., Professor of Legal Bibliography.
THOMAS FORTIN, LL.L., B.C.L., Professor of Civil Procedure and Municipal Law.
W. DEM. MARLER, B.A., B.C.L., Professor of Notarial Law.
HON. C. J. DOHERTY, D.C.L., Professor of Civil Law.
HARRY ABBOTT, Q.C., B.C.L., Professor of Commercial Law.
EUGENE LAFLEUR, B.A., B.C.L., Professor of Civil Law.
PERCY C. RYAN, B.C.L., Lecturer on Civil Procedure.

acting—Dean of Faculty.—Professor ~~TRENHOLME~~. Davidson
Secretary and Librarian of the Faculty.—Professor MCGOUN.
Corporation Examiners for Degrees.—Professors TRENHOLME and FORTIN.
Matriculation Examiner of the Faculty.—Professor LAFLEUR.

The Faculty of Law feels much satisfaction in being able to announce that the important step, so long and earnestly desired by all friends of the University, of placing the McGill School of Law on such a substantial and permanent basis as to enable it efficiently to perform its part in the great work of legal education in Canada, has been accomplished by the magnificent endowment presented to the University by Mr. William C. McDonald. This endowment places the Faculty in a position to offer to those who desire to study the Law, either with a view to its practice as a profession or as a means of culture, or as a qualification for the discharge of the higher duties of citizenship, a comprehensive and complete course of legal study, with the use of library, reading room and other aids which have not heretofore been at the command of the Faculty. The course of study to be pursued, extending over a period of three years, and the instruction to be imparted,

while designed so far as possible to qualify professional Students for the practice of their profession, will also fully recognize the important fact, which, no doubt, was a main inducement for the action of the Faculty's generous benefactor, that upon the character of the Bar depends that of the Bench and of the administration of justice, and to a great extent also the character of the public men and public life of the country ; that, in fact, from the ranks of no other profession are so many called to fill high positions of trust and to perform duties, the efficient and upright discharge of which is of vital importance to the community.

In re-organizing the Faculty, under the W. C. McDonald endowment, a number of well-known names have been added to the staff, as shown above, and the courses largely specialized. It was felt, that while professional men, engaged in the active practice of their profession, might be relied upon to deliver regularly a limited number of lectures, on special subjects, they could not be expected to undertake to submit to the serious interference with their business and inevitable interruptions involved in very lengthy courses. And to obviate the difficulties and drawbacks necessarily arising from sole dependence, as heretofore, on professional men in active practice, for attending to the interests and maintaining the efficiency of the Faculty, and to meet a deeply-felt want in this respect, the Dean has been appointed as a salaried officer, whose duty it will be primarily to devote his whole time to the work.

Further, the Professor of Legal Bibliography has been appointed secretary and librarian, and will have supervision of the Library—comprising at present the law libraries of the late Mr. Griffin, Q.C., of the late Chancellor Day, and of part of the library of the late Mr. Justice Mackay, all of which were bequeathed to the University ; and also of the law library of the late Mr. Justice Torrance, now the property of the Fraser Institute, of which he was a trustee —the use of which has been generously granted to the Faculty by the present trustees. The above law books will of themselves afford to the law student a library which will generally prove sufficient for his wants, and which will be kept up and added to by the expenditure of a sum annually in the purchase of books. There will also be provided in connection therewith a reading room, in which the leading law magazines and literature of the day will be found.

As a place for the study of law by professional students, Montreal affords undoubted advantages, among other reasons, on account of the great variety and extent of the legal business done there, the constant sitting of all the principal courts of the Province, and the large number of first-class law offices open to students; while for all students, and especially for students of historic and philosophic jurisprudence, no more interesting or attractive legal system exists than that prevailing in this Province, where may be daily seen and studied, not simply theoretically, but in active operation as parts of our law, the three famous systems of jurisprudence,—Roman, French and English,—with additions and modifications introduced by our own legislatures and courts. The imposing features of the Roman Law may be recognized throughout the greater portion of our Civil Code, often combined with or incorporated into that noble system elaborated and perfected by Pothier and other great French jurists, both of the ancient and modern epochs, which is the direct source of most of our Civil Law; while nearly the whole body of English Criminal and Constitutional Law and large portions of English Commercial Law are equally parts of the law of this Province.

The importance of the Notarial profession, and of a knowledge of notarial practice and conveyancing, has led to the appointment as a full member of the Faculty of a Professor of Notarial Law, whose course of lectures will be attended by all professional students.

With a view to extending as far as possible the usefulness of the Faculty, the courses of lectures on commercial subjects have been so arranged, that young men engaged in banks or other business houses can attend them without interference with their regular duties. Students of other departments of the University, and, in fact, all who may desire to do so, may attend such particular courses as they may see fit to select. It is hoped that the courses delivered will be found beneficial to all students, indeed to all who may desire to know something of the constitution and laws by which they are governed, and of a science which had been characterized by Burke as "the collected reason of ages, combining the principles of original justice with the infinite variety of human concerns."

While the Faculty accepts for matriculation the requirements stated in the Regulations below, it nevertheless strongly recom-

mends students intending to study law to take the B.A. course in the Faculty of Arts as a preliminary qualification ; and if that be not attainable, as much as possible of the Arts course.

Lectures and Examinations.

The classes in Law will begin on Monday, 2nd September, 1895, at 4 p.m.

The Supplemental and Matriculation Examinations will be held on the same day, at 10 a.m.

The lectures will be delivered in two terms : the first beginning on Monday, 2nd September, 1895, and the second beginning on Monday, 6th January, 1896.

The Examinations will be held in the William Molson Hall, McGill College building, at Christmas, and at the close of the session, and as announced below, unless otherwise determined by the Faculty.

The complete course of study in this Faculty extends over three years. Attendance at lectures is required of all students proceeding to the degree of B.C.L.

Professors Fortin and Lafleur will deliver their lectures in French.

Scholarships and Prizes.

Two scholarships, each of one hundred dollars, are offered for competition, the preference being given to students whose domicile is not in Montreal or vicinity. They will be awarded, after the Sessional Examinations in April, 1896, upon the results of the Examinations of the first year, and will be payable during the second year.

Prizes open to competition by all the students except the medalist and holders of scholarships will also be given to the students taking the best standing in each year.

No scholarship or prize shall, however, be awarded to any student unless a sufficiently high standing, in the estimation of the Faculty, be attained, to merit it.

Classification of Students.

Matriculated Students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B.C.L.

Occasional Students will be received without matriculation for attendance on any particular series of Lectures.

Students who have completed their course of three years, and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

COURSE OF STUDY FOR 1895-96.

Roman Law:

1st Year.

History of Roman Law
Maine, Ancient Law
Institutes of Justinian
Gaius, Commentaries

2nd and 3rd Years.

Institutes of Justinian
Gaius, Commentaries
Maine, Ancient Law
Criminal Law
Constitutional Law
International Law

} THE DEAN.

Law of Real Estate:

History and nature of various kinds of tenure of real property in the Province and their incidents. } Professor WURTELE.

Commercial Law:

Negotiable Instruments ..... Professor DAVIDSON.

Law of Contracts ..... Professor GEOFFRION.

Legal Bibliography and History:

Sources of our Law; Imperial Statutes and English laws in force here; Legislation within the Province; Classification of authorities, French and English; Bibliography } Professor McGOUN

Civil Law:

Prescription
Privileges and Hypothecs
Municipal Code } Professor FORTIN.

Notarial Law:

Notarial Practice and Conveyancing ..... Professor MARLER

Civil Law:

Lease and Hire..... .....Professor DOHERTY.

Commercial Law:

Law of Trade Marks, Patents and Copyright..... ....Professor ABBOTT.

Commercial Law:

Law of Evidence.... .....Professor LAFLEUR.

Civil Procedure:

Jurisdiction of the civil courts.....
General Rules of Pleading..... .....
Code of Procedure.... ..... } Lecturer RYAN.

FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student may apply to the Secretary, Prof. McGoun, 181 St. James Street, for examination and entry in the Register of Matriculation, and shall procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course.

2. The Degree of B.A. obtained from any Canadian or other British University; or a certificate of having passed the examination before the Bar for admission to study Law in the Province of Quebec; or the intermediate Examination in the Faculty of Arts in McGill University, will be accepted in lieu of Examination for Matriculation in this Faculty. For other candidates the Matriculation Examination this year will be in the following subjects:—

Latin.—Virgil, Æneid, Book I.; Cicero, Orations I. and II. against Catiline, Latin Grammar.

French.—De Fivas' "Grammaire des Grammaires;" *Molière, "Le Bourgeois Gentilhomme;" †Translation into French of Macaulay's Essay on Frederick the Great.

Exercises in Composition and Grammatical Analysis, in English and French.

Mathematics.—Arithmetic; Algebra to the end of Simple Equations; Euclid, Books I., II., III.

History.—White's Outline of Universal History (or any equivalent manual); *Green's Short History of the English People; Miles' School History of Canada; †Duruy, Histoire de France.

Literature.—*Collier's Biographical History of English Literature; † Laharpe Cours de Littérature; † Lefranc, Cours de Littérature.

Rhetoric.—Whately's Rhetoric; Blair's Lectures (small edition).

Philosophy.—*Whately's Logic; †Logique de Port Royal; †Cousin, Histoire de la Philosophie; *Stewart's Outline of Moral Philosophy.

N.B.—The works mentioned above preceded by an asterisk are for English Students only. Those preceded by a cross are for French Students only. The remainder are for both English and French.

3. Students of Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year, and those only, unless by special permission of the Faculty.

4. The register of Matriculation shall be closed on the 1st November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a special examination to be determined by the Faculty; and, if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Partial Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket or tickets for the class or classes they desire to attend.

6. Students who have attended collegiate courses of legal study in other Universities, for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All Students shall be subject to the following regulations for attendance and conduct:—

(1) A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted, and the said class-book shall be submitted to the Faculty at each monthly meeting; and the Faculty shall, after examination of such class-book, decide which Students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(2) Punctual attendance on all the classes proper to his year is required of each Student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter, unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to and from it, Students are expected to conduct themselves in the same orderly manner as in the Class rooms. Any Professor observing improper conduct in the Class rooms, or elsewhere in the building, will admonish the Student, and, if necessary, report him to the Dean.

(3) When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(4) Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(5) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session shall in each case be determined by the Faculty.

(6) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

8. The College year shall be divided into two terms, the first extending to the Christmas vacation, and the second from the expiration of the Christmas vacation to the end of April following.

The lectures will be delivered between the hours of half-past eight and half-past nine in the morning, and between four and half-past six in the afternoon; and special lectures in the evening, at such hours and in such order as shall be determined by the Faculty. Professors shall have the right to substitute an examination for any such lecture.

9. At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors, and of such other examiners as may be appointed by the Corporation; which examination shall be conducted by means of printed questions, answered by the Students in writing in the presence of the Examiners. The result shall be reported as early as possible to the Faculty.

After the examinations at the close of the second term, the Faculty shall decide the general standing of the Students, taking into consideration the examinations of both terms, both of which examinations shall be considered the Sessional or Final Examinations for the college year, as the case may be.

10. No Student shall be considered as having kept a Session unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty in all the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown to grant a dispensation to any Student from attendance on any particular Course or Courses of Lectures, but no distinction shall in consequence be made between the Examinations of such Students and those of the Students regularly attending Lectures. No Student shall pass the degree of B.C.L. unless he has prepared a Thesis, either in French or English, which shall have been approved by the Faculty.

12. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall, on or before the first day of March, forward such Thesis to the Secretary of the Faculty, marked with the *nom de plume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *nom de plume* on it, and containing inside his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law, shall be awarded to the Student who, being of the Graduating Class, having passed the Final Examinations, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special Examination for the Medal, which examination shall include the subject of Roman Law.

14. Every Candidate, before receiving the Degree of B.C.L., shall make the following declaration :—

Ego A. B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem, et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar.

15. The fees in the Faculty are as follows :—

Matriculation or Registration Fee	$ 5 00
Sessional Fee by Ordinary Students	36 00
Grounds Fee, payable by all Students including Partial	2 00
Graduation Fee, including registration as voter in election of fellows	12 50
Fee for supplemental examination	5 00
Sessional Fee by Partial Students, for each course	3 00
For Partial Students who are students in other departments of the University or affiliated Colleges, taking two or more courses, a single fee of	5 00

Matriculation and Sessional Fees must be paid on or before Nov. 1st ; and if not so paid, the name of the Student shall be removed from the books, but may be re-entered by consent of the Faculty, and on payment of a fine of not less than $3. Students already on the books of the University shall not be required to pay any Matriculation Fee.

16. Partial Students may be admitted into any class on such terms as shall be arranged by the Faculty.

17. The requirements and conditions for obtaining the Degree of D.C.L. in course can be ascertained upon application to the Secretary of the Faculty.

SYLLABUS.

Monday, 2nd September, 1895. Matriculation and Supplemental Examinations Ordinary Lectures begin.

Saturday, 7th December. Last day for notice to be sent to Secretary of Section of the Bar by candidates at the January Examination for admission to study or to practise Law in the Province of Quebec.

Monday, 6th January, 1896. Lectures, Second Term, begin.

Wednesday, 8th January. Bar Examinations take place at Montreal.

Tuesday, 25th February. Theses for Degree of B.C.L.

Monday, 27th April. Declaration of results of Examinations.

Thursday, 30th April. Convocation for Degrees in Law.

Monday, 3rd June. Last day for notice to be sent to Secretary of Section of the Bar by candidates at the July Examination for admission to study or to practise Law in the Province of Quebec.

Wednesday, 2nd July. Bar Examinations take place at Quebec.

EXAMINATIONS.

Dates of Examinations, subject to be changed, if need be, by the Faculty.

Before Christmas :—

Monday, 2nd September, 1895, at 10 a.m. Matriculation and Supplemental Examinations.

Saturday, 19th October, 1895, at 3 p.m. On Preliminary Course on Obligations —The Dean.

Saturday, 26th October, 1895, at 4 p.m. Bibliography of the Law of Quebec—Prof. McGoun.

Saturday, 2nd November, 1895, 4 p.m. Lecturer Ryan—On Preliminary Course.

Saturday, 14th December, 1895, at 4 p.m. On Civil Law—Professor Fortin.

Monday, 16th December, 1895, at 4 p.m. On Commercial Law (Negotiable Instruments)—Professor Davidson.

After Christmas :—

Saturday, 8th February, 1896, at 4 p.m. On Contracts—Professor Geoffrion.

Saturday, 15th February, 1896, at 4 p.m. On Procedure—Lecturer Ryan.

Saturday, 22nd February, 1896, at 3 p.m. On —The Dean.

Saturday, 14th March, 1896, at 4 p.m. On Law of Real Estate—Professor Wurtele.

Saturday, 21st March, 1896, at 4 p.m. On Law of Evidence—Professor Lafleur.

Saturday, 18th April, 1896, at 4 p.m. On Law of Trade Marks, Patents and Copyright—Professor Abbott.

Monday 20th April, 1896, at 4 p.m. On Notarial Law—Professor Marler.

Tuesday, 21st April, 1896, at 4 p.m. On —Professor Fortin.

Wednesday, 22nd April, 1896, at 3 p.m. On —The Dean.

FACULTY OF LAW—TIME TABLE, 1895-96.

I. MONDAY, 2nd September, to FRIDAY, 4th October, 5 weeks.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
8.30 to 9.30 a.m.	Lect. Ryan.		Lect. Ryan.		Lect. Ryan.
4 to 5 p.m.	The Dean.	The Dean.	The Dean.	The Dean.	The Dean.
5 to 6 p.m.	Prof. McGoun.	Prof. McGoun.	Prof. McGoun.	Prof. McGoun.	Prof. McGoun.

II. MONDAY, 7th October, to FRIDAY, 8th November, 5 weeks.

8.30 to 9.30 a.m.					
4 to 5 p.m.	The Dean.	Prof. Fortin.	The Dean.	Prof. Fortin.	The Dean.
5 to 6 p.m.	Lect. Ryan.	Prof. Davidson.	Lect. Ryan.	Prof. Davidson.	Lect. Ryan.

III. MONDAY, 11th November, to FRIDAY, 13th December, 4 weeks.

8.30 to 9.30 a.m.					
4 to 5 p.m.	Prof. Fortin.	The Dean.	Prof. Fortin.	The Dean.	Prof. Fortin.
5 to 6 p.m.	Prof. Davidson.	Lect. Ryan.	Prof. Davidson.	Lect. Ryan.	Prof. Davidson.

IV. MONDAY, 6th January, to FRIDAY, 7th February, 5 weeks.

8.30 to 9.30 a.m.	Prof. Doherty.		Prof. Doherty.		Prof. Doherty.
4 to 5 p.m.	The Dean.	Prof. Geoffrion.	The Dean.	Prof. Geoffrion.	The Dean.
5 to 6 p.m.	Lect. Ryan.	Prof. Lafleur.	Lect. Ryan.	Prof. Lafleur.	Lect. Ryan.

V. MONDAY, 10th February, to FRIDAY, 13th March, 5 weeks.

8.30 to 9.30 a.m.		Prof. Doherty.		Prof. Doherty.	
4 to 5 p.m.	The Dean.	Prof. Wurtele.	The Dean.	Prof. Wurtele.	The Dean.
5 to 6 p.m.	Prof. Lafleur.	Prof. Abbott.	Prof. Lafleur.	Prof. Abbott.	Prof. Lafleur.

VI. MONDAY, 16th March, to FRIDAY, 17th April, 5 weeks.

8.30 to 9.30 a.m.					
4 to 5 p.m.	The Dean.	Prof. Fortin.	The Dean.	Prof. Fortin.	The Dean.
5 to 6 p.m.	Prof. Abbott.	Prof. Marler.	Prof. Abbott.	Prof. Marler.	Prof. Abbott.

APPENDIX.

The attention of intending Students is called to the following provisions of the Revised Statutes of Quebec and amendments, as bearing on the requirements for the study and practice of Law in the Province :—

ARTICLE 3544 R.S.Q.—Examinations for admission to study and to practise law in the Province of Quebec are held at the time and place determined by the General Council.

The places and dates as at present fixed are :

MONTREAL.....Wednesday, 8th Jan., 1896.
QUEBEC.....Wednesday, 2nd July, 1896.

and alternately at Montreal and Quebec every six months, namely—at Montreal on the second Wednesday of each January, and at Quebec on the first Wednesday of each July.

All information concerning these examinations can be obtained from the General Secretary's Office. The present General Secretary is W. C. Languedoc, Esq., Quebec.

ARTICLE 3546.—Candidates must give notice as prescribed by this article, at least one month before the time fixed for the examination, to the Secretary of the Section in which he resides, or in which he has resided for the last six months.

The present Secretary of the Montreal Section is L. E. Bernard, Esq., New York Life Building, Montreal.

ARTICLE 3503a.—Added by Statute of Quebec, 53 Victoria (1890), Cap. 45, provides that Candidates holding the diploma of Bachelor of Arts, Bachelier-es-Lettres, or Bachelier-es-Science from a Canadian or other British University, is dispensed from the examination for admission to study. Such Candidates are required to give the notice mentioned above.

ARTICLE 3548 R.S.Q. (as altered by by-law of the General Council).—On giving the notice prescribed by Article 3546, the Candidate pays the Secretary a fee of $2, and makes a deposit of $30 for admission to study, or of $70 for admission to practice, which deposit, less $10, is returned in case of his not being admitted.

ARTICLE 3552 (amended 1894, Q. 57 Vic., c. 35).—To be admitted to practice, the Student must be a British subject, and must have studied regularly and without interruption during ordinary office hours, under indentures before a Notary, as Clerk or Student, with a practising Advocate, during Four Years, *dating from the registration of the certificate of admission to study.* This term is reduced to Three Years in the case of a student who has followed a regular law course in a University or College in this Province, and taken a degree in law therein.

REQUIREMENTS FOR DEGREE OF DOCTOR OF CIVIL LAW.

ADOPTED OCTOBER, 1881.

Every Candidate for the degree of D.C.L. in Course must be a Bachelor of Civil Law of twelve years' standing, and must pass such examination for the Degree of D.C.L. as shall be prescribed by the Faculty of Law. He shall also, at least two months before proceeding to the Degree, deliver to the Faculty twenty-five printed copies of a Thesis or Treatise of his own composition on some subject, selected or approved by the Faculty, such Thesis to contain not less than fifty octavo pages of printed matter, and to possess such degree of merit as shall, in the opinion of the Faculty, justify them in recommending him for the degree.

The candidate shall also pay to the Secretary of the Faculty, annually during the period of twelve years, for the retention of his name on the books of the Faculty, a fee of two dollars, to form part of the Library Fund of the Faculty. Upon cause shown, however, and with the consent of the Faculty, such fees may be paid at one time before the granting of the degree.

The Examination for the Degree of D.C.L. in Course, which shall be open to all who have taken the degree of B.C.L. of this University in the past, as well as to such as may take the degree in future, shall, until changed, be on the following subjects and authors, with the requirement of special proficiency in some one of the groups below indicated. In the groups other than the one selected by the Candidate for special proficiency, a thorough acquaintance with two works of each group shall be sufficient, including in all cases the work first mentioned in each group and the first two works in group third.

1. INTERNATIONAL LAW.

Phillimore, International Law.
Hall, " "
Wharton, Conflict of Laws.

Savigny's International Law, by Guthrie.
Fœlix, Droit International Privé.
Brocher, Droit International Privé.
Dicey on Domicile.
Story, Conflict of Laws.
Maine, Lectures on International Law.

2. Roman Law.

Ortolan's Institutes.
Mommsen's History of Rome.
Roby's Introduction to the Digest.
Muirhead's Roman Law.
Mackenzie's Roman Law.
Savigny's Roman Law in the Middle Ages.
Bryce's Holy Roman Empire.
Institutes of Gaius.
Fustel de Coulanges, La Cité Antique.

3. Constitutional History and Law.

Dicey's Law of the Constitution.
Stubbs' Constitutional History of England.
Hearn, Government of England.
Bagehot, English Constitution.
Francueville, Gouvernement et Parlement Britanniques.
Gneist, Constitution of England.
Hallam, Constitutional History of England.
May, " " "
Gardiner, " " "
May, Democracy in Europe.
Freeman, Growth of the English Constitution.
Mill, Representative Government.
Bentham, Fragment on Government.
Maine, Popular Government.

4. Constitution of Canada and Works relevant thereto.

Todd, Parliamentary Government in the British Colonies.
Bourinot, Federal Government in Canada.
Doutre, Constitution of Canada.

Cartwright, Cases under the British North America Act.
Lord Durham's Report on British North America.
Lareau, Histoire du Droit Canadien.
Houston's Constitutional Documents of Canada.
Volume O., Statutes of Lower Canada.
Masères' Collection of Quebec Commissions.
Laferrière, Essai sur l'Histoire du Droit Français.
Dilke, Problems of Greater Britain.
Matthews (Jehu), A Colonist on the Colonial Question.
Bryce, American Commonwealth.
Curtis, History of the Constitution of the United States.
Cooley, Principles of Constitutional Law.

5. CRIMINAL LAW, JURISPRUDENCE AND POLITICAL SCIENCE.

Stephens, History of the Criminal Law.
Blackstone, Vol. IV.
Harris, Principles of Criminal Law.
Pike, History of Crime.
Holland's Elements of Jurisprudence.
Austin, Lectures, omitting chapters on Utilitarianism.
Lorimer's Institutes.
Amos, Science of Law.
Woolsey, Political Science.
Lieber, Political Ethics.
Freeman, Comparative Politics.
Aristotle's Politics, by Jowett.

Faculty of Comparative Medicine and Veterinary Science.

THE PRINCIPAL (*Ex-officio*).

Professors :

MCEACHRAN (D.), BAKER, MCEACHRAN (C.)

Associate Professors :

GIRDWOOD,	PENHALLOW.
WILKINS,	MILLS.
BLACKADER,	ADAMI.

Dean of the Faculty :—D. MCEACHRAN, D.V.S.
Registrar :—C. MCEACHRAN, D.V.S.

The Seventh Session of the Faculty (being the thirtieth of the Montreal Veterinary College) will be opened on the 24th September, 1895, by an introductory lecture, at 8 p.m., in the lecture-room of the Faculty, No. 6 Union Avenue. The regular courses of lectures will begin on 2nd October, at the hours named in the time table, and will continue till the end of March.

The complete curriculum in this Faculty extends over three years. Graduates of recognized Medical Colleges are allowed to present themselves for examination after regular attendance on one full sessional course ; graduates of recognized Agricultural Colleges, in which Veterinary Science constitutes a branch of study, after regular attendance for two full courses.

Allowances will be made to students of Human or Comparative Medicine, or others who can produce certified class tickets for attendance on any of the subjects embraced in the curriculum from any recognized college or university.

Graduates and students who avail themselves of the above privileges will nevertheless be required to pass an examination in the subjects comprised in the three years' course, unless, from satisfactory evidence otherwise produced, the examiners consider it to be unnecessary.

Graduates of recognized Veterinary Colleges, desirous of taking the degree, may do so by attendance on the final subjects for one full session, but will be required to pass the examination on all the subjects embraced in the curriculum, botany excepted.

Partial and Agricultural students will be received without matriculation for attendance on any particular series of lectures. Such students will not be examined, nor will they be entitled to receive class certificates except as Partial students, nor will such attendance be accepted should the student subsequently wish to become a regular student of the Faculty.

MATRICULATION.

Every student, previous to his admission, must produce a certificate of educational acquirements satisfactory to the Faculty, or submit himself to a matriculation examination in (1) writing, (2) reading aloud, (3) dictation, (4) English grammar, (5) composition, (6) outlines of geography with special reference to North America, (7) arithmetic (including vulgar and decimal fractions).

A. N. Shewan, M.A., will hold the matriculation examination on Saturday, 28th Sept., 9 a.m., at the College, 6 Union Avenue, when all those intending to enter the course should present themselves for examination. Candidates possessing certificates of education or of previous matriculation should produce them for the inspection and approval of the examiner. Graduates of any Faculty in a recognized University or Agricultural College are not required to pass this examination.

No College is recognized unless its students are required to pass a matriculate examination.

NOTE.—It is contemplated to add the rudiments of Latin to the requirements for matriculation in the near future.

REGISTRATION AND PAYMENT OF FEES.

The following are the College regulations:

All students desirous of attending the classes shall, at the commencement of each session, enroll their names and residences in the register of the Faculty, and procure from the Registrar a ticket of registration, for which each student shall pay a fee of $5.

The said register shall be closed on the last day of October in each year. The fees are payable to the Registrar, and all class tickets will be issued by him, and must be paid in advance (except under special circumstances) at the time of registration.

All students must register, including those who receive free bursaries.

Fees for the whole course are $180, which may be paid in three annual payments of $60 each, which, in all cases, must be paid on entering. Matriculation fee, $5, which is to be paid prior to the examination; $5 for registration; and $5

for re-registration, payable at the beginning of each of the following two Sessions, and $20 on receiving the diploma. Students who are allowed time for previous study will be required to pay full fees. Payments must be made in all cases as above.

SCHOLARSHIPS.

The Faculty offers for competition this session (1895 6) two scholarships of fifty dollars each: one for First, and the other for Second year Students. These scholarships will be awarded to the student in each year who has the highest aggregate and who obtains not less than fifty per cent. in any one subject, and an average of seventy-five per cent. of the total number of marks attainable.

STUDENTS OF THE PROVINCE OF QUEBEC.

In consideration of the annual grant, the Council of Agriculture has the privilege of sending thirteen pupils, free of expense, to the whole course; such students, however, pay a fee of $5 for the course in Botany and $5 annually for registration. These Bursaries may be obtained by young men resident in the Province of Quebec, by application made to the Dean of the Faculty in the handwriting of applicant, accompanied by a recommendation from the Agricultural Society of the district in which he resides, provided the Council considers him qualified by education and in other respects for entering the College.

In all cases, except when specially arranged, holders of Bursaries will be required to give a guarantee that they will attend three Sessions; and failing to do so, they shall be required to pay the fees for the Sessions which they have attended.

GENERAL REGULATIONS.

Students of this Faculty will be graded as of the First, the Second, and the Final year.

In each year students will take the studies fixed for that year only, unless by special permission of the Faculty.

Persons desirous of entering as Partial Students shall apply to the Dean of the Faculty for admission, and shall obtain a ticket or tickets for the class or classes they desire to attend.

All Students shall be subject to the following regulations as regards attendance and conduct:—

A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said class-book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations; and the Faculty shall, after examination of such class-book, decide which Students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examinations in the respective classes.

Punctual attendance on all the classes proper to his year is required of each Student. Absence or tardiness, without sufficient excuse, or inattention or disorder in the class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to or from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the Student, and, if necessary, report him to the Dean.

When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honors, suspend from classes, or report to the Corporation for expulsion.

Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

All cases of discipline involving the interest of more than one Faculty, or of the University generally, shall be reported to the Principal, or in his absence, to the Vice-Principal.

The College year shall be divided into two terms, the first extending to the Christmas vacation and the second from the expiration of the Christmas vacation to the 30th March following.

Each lecture shall be of one hour's duration, but the Professors shall have the right to substitute an examination for any such lecture.

At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors and such other examiners as may be appointed by the Corporation. The results shall be reported as early as possible to the Faculty.

The Students have all the privileges of the McGill Medical Faculty's Laboratories, which are thus described in their annual calendar :—

PHYSIOLOGICAL LABORATORY.

The Physiological Laboratory, which is situated on the ground floor, is supplied with the most modern apparatus for the practical teaching of this most important branch of the medical curriculum. It contains, amongst other valuable instruments ; kymographs, various manometers, etc., for demonstrating blood pressure ; myographs, rheocords, moist chambers, etc., and various electrical appliances for demonstrating experiments in connection with nerve and muscle ; special apparatus for illustrating various points in respiration ; apparatus specially suitable for demonstrating the processes of digestion, as well as the chemical composition and nature of the secretions, and the chief constituents of the tissues and nutritive fluids. The laboratory is arranged in such a way as to permit of Students assisting at, and taking part in, these demonstrations. [During the past

session, important additions of apparatus have been made to the Physiological Laboratory.]

CHEMICAL LABORATORY.

The Chemical Laboratory is large, lofty and well lighted, and can accommodate comfortably 76 men at one time. Each Student, when entering on his course, has a numbered table in the laboratory assigned to him for his use during the session. Each table has its own gas and water fixtures, and is provided with shelves for its corresponding set of reagent-bottles, as well as a drawer and locker containing a modern set of chemical apparatus specially adapted for the work. This apparatus is provided by the Professor of Chemistry, and supplied to each Student without extra charge. The Student is required to pay only for apparatus broken or destroyed.

The laboratory is furnished with a large draught closet for ventilation, sulphuretted hydrogen apparatus, gas and combustion furnaces, etc., giving to the Student unsurpassed advantages for acquiring a sound and practical knowledge of medical chemistry.

PATHOLOGICAL LABORATORY.

In the Pathological Laboratory, accommodation will be provided for Students or practitioners who desire to carry on advanced study or private pathological research.

The Laboratory has been entirely rebuilt recently, and is well stocked with the usual apparatus for pathological and bacteriological work.

The demonstrations in Morbid Anatomy will be given in a small laboratory, specially arranged for the work.

The classes in Pathological Histology will be held in the Histological Laboratory.

HISTOLOGICAL LABORATORY.

The Histological Laboratory is a large, well lighted room on the second floor. It is so arranged, that over eighty students can be present at the microscopical demonstrations. For this purpose, it is supplied with thirty-five microscopes, all from the well known makers, Zeiss, Hartnack and Leitz. From the large number of miscroscopes employed, students will have special facilities in studying and making themselves thoroughly acquainted with the specimens that are subjects of demonstration.

PRACTICAL MICROSCOPY.

This is an entirely optional course, in charge of Prof. Wilkins, assisted by Dr. Gunn. It is intended especially for teaching the technique of Microscopy. Students will be shown how to examine blood, etc., also to cut, stain, and mount

specimens. For this purpose they will have furnished them normal structures, with which they will be able to secure a cabinet of at least 100 specimens, which will be of great benefit when in practice. Reagents and apparatus, except cover-glasses and cabinet cases, provided. Fee, $8.

COURSES OF LECTURES.

BOTANY.*

D. P. PENHALLOW, B.Sc.

The course in Botany includes General Morphology, Histology, Physiology and Classification. It is designed to give special prominence to Physiology, which will be made comparative whenever practicable. The course is illustrated by the microscope and gas microscope, and by the collections, models and apparatus in the Redpath Museum. Use is also made of the resources for practical instruction in Morphology, now afforded by the Botanic Garden.

ZOOLOGY.*

W. E. DEEKS, B.A., M.D.

This course includes a systematic study of the classification of animals, illustrated by Canadian examples and by the collections in the Peter Redpath Museum. It affords suitable preparation for collecting in any department of Canadian Zoology or Palæontology, and as an introduction to Comparative Physiology.

Students in Botany or Zoology will receive tickets to the Peter Redpath Museum and to the Museum of the Natural History Society of Montreal.

It is optional with students to select either the course on Botany or on Zoology.

CHEMISTRY.

GILBERT P. GIRDWOOD, M.D.

Inorganic Chemistry is fully treated; a large portion of the course is devoted to Organic Chemistry and its relations to Medicine. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration, abundant apparatus is possessed by the College.

The Chemical Laboratory will be open to members of the Class to repeat experiments performed during the course, under the superintendence of the Professor or his Assistant.

---

* Students may take either Botany or Zoology, but must intimate at the beginning of the Session their choice, and adhere to this, except by special permission of the Faculty. Students desiring to attend both subjects in one session may do so by permission of the Faculty.

PHYSIOLOGY.

WESLEY MILLS, M.D.

The purpose of this Course is to make Students thoroughly acquainted, so far as time permits, with modern Physiology, its methods, its deductions, and the basis on which the latter rest. Accordingly, a full course of lectures is given, in which both the Experimental and the Chemical departments of the subject receive attention.

In addition to the use of diagrams, plates, models, etc., every department of the subject is experimentally illustrated. The experiments are free from elaborate *technique*, and many of them are of a kind susceptible of ready imitation by the student.

Laboratory work for Senior Students:—

(1) During the first part of the Session there will be a course on Physiological Chemistry, in which the Student will, under direction, investigate food-stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided.

(2) The remainder of the Session will be devoted to the performance of such experiments as are unsuitable for demonstration to a large class in the lecture room, and such as require the use of elaborate methods, apparatus, etc.

HISTOLOGY.

GEO. WILKINS, M.D.

This will consist of a course of ten lectures and twenty-five weekly demonstrations with the microscope. As the demonstrations will be chiefly relied upon for teaching the Microscopic Anatomy of the various structures, the specimens under observation will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

COMPARATIVE PATHOLOGY.

J. G. ADAMI, M.D.

The teaching in Pathology in the McGill Medical Faculty includes courses in general and special Pathology, in Bacteriology (held during the Summer Session) and instruction in the performance of Autopsies. These courses—while directed especially towards giving to the Students a due knowledge of the causation and course of disease in man—are necessarily based largely upon the results of observations upon the lower animals, and the greater part of all these causes is applicable equally to conditions obtaining in the domestic animals. There is in addition a practical course of Pathological Histology for Students of Comparative Medicine, and instruction is given upon the performance of Autopsies upon the lower animals.

MEDICINE AND SURGERY.

D. McEachran, F.R.C.V.S.

Students of all years must attend.

The course embraces the principles and practice of Veterinary Medicine, including the diseases of domestic animals, their nature, causes, symptoms and treatment. It necessarily includes Pathology and Pathological Anatomy, with daily clinical demonstrations in the hospital and the yard practice of the College, as well as illustrations from plates, preserved specimens, and fresh material furnished by the Pathologist.

The course on Surgery embraces Surgical Anatomy and Practice of Surgery, and will be illustrated by a large collection of surgical appliances.

The large and varied practice of the College furnishes abundance of cases for demonstration purposes.

Special lectures will be given on Sanitary Science, Quarantine, inspection of meat and milk, and also on the examination of horses for soundness.

ANATOMY.

M. C. Baker, D.V.S.

In this course the Anatomy of the horse is the subject of special study; while the structural differences of all the domestic animals are carefully explained and illustrated by fresh subjects. There is a very large collection of anatomical models by Dr. Auzoux, of Paris, natural injections and dissections, and a most complete collection of diagrams, including Marshall's complete set, M. Achille Comte's Anatomical and Zoological series, also a large collection of drawings specially prepared for the school by Mr. Scott Leighton, artist, Boston, and Mr. Hawksett, Montreal.

The dissecting room is open at all hours, subjects are easily procured, and either the Professor or Demonstrator will be in attendance to superintend and direct students in practical dissection. The room is furnished with every convenience, is throroughly lighted, and affords students all that can be reasonably desired.

Students are required to pay for the material necessary for practical anatomy.

Before a student can be allowed to present himself for his pass examination, he must produce tickets certified by the demonstrator that he has dissected two entire subjects, that is, one each session.

MATERIA MEDICA AND THERAPEUTICS.

M. D. Blackader, M.D.

This course comprises a description of the physiological and therapeutic action of all the more important medicines used in Veterinary Practice, with a short

reference to their general properties and principal preparations. It will also include a course in the practical work of compounding and administering medicines in the pharmacy and hospital. There will also be a few experimental demonstrations of the action of some of the more important drugs on animals.

CATTLE PATHOLOGY AND OBSTETRICS.

C. McEACHRAN, D.V.S.

A special course on Cattle Disease and Veterinary Obstetrics will be delivered, embracing the history of Cattle Plague; their nature, symptoms, pathological anatomy, prophylactic and therapeutic treatment; breeding and general management of breeding animals; diseases incident to gestation and parturition, etc.

SPECIAL COURSE ON DOGS.

Professor Wesley Mills will give a special course on Dogs, which will include:—

(1) Lectures on the physical and psychic characteristics of all the leading varieties, illustrated by specimens from his own kennels and other sources, as well as by plates, etc.

(2) The principles of training; the feeding and general management of dogs.

(3) The principles of breeding; the management of brood bitches and the rearing of puppies.

(4) Bench show management and the public judging of dogs.

(5) The rights and duties of dog owners.

In all of the above courses the clinical and pathological aspects of the subjects will be considered, as well as the normal.

THE MUSEUM

contains a large collection of natural and artificial specimens, consisting of skeletons of almost all the domestic animals, numerous specimens of diseased bones, preparations by Dr. Auzoux of all the different organs in the body, natural dissections, colored models, diagrams, etc., etc., all of which are used in illustrating the lectures, and to which the Students have frequent opportunities of referring. Students will also enjoy the privileges of the Museum of the Medical Faculty of McGill University, which is rich in pathological specimens.

THE PHARMACY.

All the medicines used in the practice of the College are compounded by the Students, under the direction of the Professors, from prescriptions for each particular case, and most of them are administered or applied by them. For this purpose they are detailed for certain pharmaceutical duties alternately. By this

means they become familiar with the physical properties, compatibilities, doses, and uses of the medicines, and become expert in administering them to the different patients brought for treatment.

THE PRACTICE.

The Hospital and Daily Clinics, as well as a very extensive out-door practice, including most of the largest stables in the city and numerous farms in the vicinity, afford excellent opportunities for clinical observation on horses of all breeds and ages. Owing to the number of cattle kept in the city, and the valuable thoroughbred herds in the neighborhood, advanced students are enabled to see and do considerable cattle practice. The dog practice is the largest in Canada. All canine diseases can be studied clinically, owing to the large number of dogs brought to the College for medical or surgical treatment.

Senior Students will be appointed to act alternately as dressers in the Hospital, and first and second year men must assist in administering medicines and at operations.

FREE CLINICS.

To afford the Students still more extensive opportunities of clinical observation, an hour a day will be given to free clinics for animals belonging to the poor, which will be duly advertised.

TEXT-BOOKS.*

The following text-books are recommended:—

Anatomy—Chauveau's Comparative Anatomy; Strangeway's Veterinary Anatomy; McFadeyan's Veterinary Anatomy.

Physiology—Huxley's Elementary Lessons; Prof. Mills' Text-Book of Comparative Physiology; Outlines of lectures by the same author.

Histology—Klein's Elements; Schafer's Essentials of Histology.

Botany—Gray's Structural Botany; Bessey's Botany.

Zoology—Dawson's Handbook.

Chemistry—Wurtz's Elementary Chemistry; Armstrong; Remsen's Organic Chemistry.

Medicine and Surgery—Williams' Principles and Practice of Veterinary Medicine; Fleming's Sanitary Science and Police; Williams' Surgery; Fleming's Operative Surgery; Robertson's Equine Medicine; Liautard's Operative Veterinary Surgery.

Materia Medica—Dun's Veterinary Medicines; Walley's Veterinary Conspectus; Tuson's Pharmacy.

---

*Students are advised not to buy text-books extensively till after consultation with the Professor who teaches the subject.

Cattle Diseases—Steel's Bovine Pathology; Clatter's Cattle Doctor (Armitage); Fleming's Veterinary Obstetrics.

Canine Diseases.—Prof. Mills' The Dog in Health and in Disease; Hill on the Dog.

Entozoa—Cobbold's Entozoa of Domestic Animals.

Pathology—Payne's Pathology.

BOARD AND TRAVELLING EXPENSES.

Board can be obtained at from $15 to $20 per month.

By the kindness of the Railway Companies, certified students of the College will be granted return tickets from Montreal to any part of their lines at greatly reduced rates, the said tickets to hold good from the close of one session to the beginning of the next.

Return tickets will also be granted for the Christmas vacation.

VETERINARY MEDICAL ASSOCIATION.

This Association is for the mutual improvement of its members in all matters pertaining to the profession.

The members are graduates and students of Veterinary Medicine, also graduates and students of Human Medicine.

The meetings are held fortnightly, at which papers are read and discussed, cases reported, etc.

The advantages which students derive from these meetings are very great. Not only do they hear carefully prepared papers on subjects of professional importance, but an opportunity is afforded for practising public speaking which in after-life is often extremely useful. The fees of the Association are expended in the purchase of books for the Library, drugs for experimental purposes, and the prizes awarded for papers read.

The Library is owned by the Association, and is under the control of officers who are elected annually. It contains nearly 600 volumes, embracing works of great antiquity, as well as the modern works on Veterinary Science and collateral subjects, in both the English and French languages, all of which are available for consultation and study by members.

Every student is expected to become a member. The entrance fee is $5, and the yearly subscription $2.50. A Diploma of Honorary Fellowship is conferred on all members who have complied with the regulations of the Association.

ASSOCIATION FOR THE STUDY OF COMPARATIVE PSYCHOLOGY.

This Society is similar in constitution to the Veterinary Medical Association.

Its object is the study of the Psychic Phenomena (intelligence, etc.) of all classes of animals, and the diffusion of sounder views on this subject.

Naturally, it is of great importance in the practice of medicine upon dumb animals, as well as of peculiar scientific interest.

QUALIFICATIONS FOR THE DEGREE.

Candidates for the Final Examination shall furnish testimonials of attendance on lectures on the following subjects:—

Either Botany or Zoology, Histology, } One course of six months, 1st year.

Chemistry, Physiology, Anatomy, } Two courses of six months, 1st and 2nd years.

General Pathology and Demonstrations, one course of six months.

Cattle Diseases and Obstetrics, Practice of Medicine and Surgery, Materia Medica and Therapeutics, } Two courses 2nd and 3rd years.

No one will be permitted to become a candidate for examination who shall not have attended at least one full course of lectures in this Faculty, including all the subjects embraced in the curriculum.

Courses of less length than the above will be received only for the time over which they have extended.

Students, except by special permission of the Faculty, must pursue the subjects of Anatomy, Chemistry, Histology and Botany in their first session, and are advised to take Physiology in addition.

Candidates who fail to pass in not more than two subjects of the first two years may be granted a supplemental examination at the beginning of the following session.

Supplemental examinations will not be granted, except by special permission of the Faculty, and on written application, stating reasons.

Candidates who fail to pass in a subject of which two courses are required may, at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon.

In addition to the written and oral examinations, candidates must pass a practical clinical test, including examination of horses for soundness, written reports being required; the clinical reports to include diagnosis, prognosis and treatment.

The following oath or affirmation will be exacted from the candidate before receiving the degree:—

DECLARATION OF GRADUATES IN COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

I, ———, promise and solemnly declare that I will, with my best endeavors, be careful to maintain the interests of this University, and that, to the best of my ability, I will promote its honor and dignity.

EXAMINATIONS.

First Year.—Pass Examinations in Botany or Zoology and Histology (oral), and sessional examinations on the other subjects of the course of the year.

Second Year.—Pass Examinations in Chemistry, Physiology, Histology (written) and Anatomy, in addition to sessional examinations.

Third Year.—Pass Examinations in Practice of Medicine and Surgery, General and Special Pathology, Veterinary Obstetrics, Diseases of Cattle and Materia Medica and Therapeutics.

N.B.—Sessional Examinations will be held from time to time during the session, and attendance at these is compulsory. The standing attained at these examinations will be taken into account at pass examinations.

AGE FOR GRADUATION.

Students under seventeen will be received as apprentices, but cannot be entered as regular Students before attaining that age.

Minors may pass the Examinations, but cannot receive the Diploma until they are twenty-one years of age.

HINTS TO STUDENTS.

The Matriculation Examination which you have to undergo is by no means a severe one ; and if you are not prepared to pass it, you should begin at once to improve your education.

You had better not commence professional reading till you have become familiar with the fundamental subjects. Practice, except under the guidance of a thoroughly educated practitioner, is more likely to mislead than aid you.

It is advisable that you should arrive in Montreal before the opening day, so as to give you time to procure suitable lodgings. Endeavor by all means to be present at the introductory lectures on all subjects ; you cannot miss one lecture without thereby losing valuable preparatory information. Come prepared to procure at once the necessary text-books and note-books. Make your arrangements so as to enable you to devote your entire time and undivided attention to your studies, as the three sessions which the curriculum covers will be found none too long to accomplish the necessary proficiency in the various branches of study required of you.

NOTICE TO GRADUATES.

For the purpose of increasing pathological material for the classes, Graduates are earnestly requested to send any interesting or obscure pathological specimens which may be met with in their practice to the Pathologist at the Veterinary College, No. 6 Union Avenue. The specimens may be sent C.O.D. by express, and will in all cases be acknowledged. A report upon the nature of the specimen will be sent if desired ; and the specimens, when of sufficient interest, will be preserved in the Museum with the names of the donors affixed.

ORDER OF LECTURES.

	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
8 to 9 a.m.	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Practical Anatomy.
9 to 10 a.m.	Practice of Medicine and Surgery.	Practice of Medicine and Surgery.	Practice of Medicine and Surgery.	Practice of Medicine and Surgery.	Practice of Medicine and Surgery.	Clinical Surgery.
10 to 11 a.m.	Cattle Pathology. 2nd and 3rd Year.	Pathology. 2nd and 3rd Year.	Cattle Pathology. 2nd and 3rd Year.	Pathology 3rd Year.	Pathology. 2nd and 3rd Year.	Pathological Demonstration.
11 a.m. to 12 m.	Practical Pharmacy and Hospital Practice.	Practical Pharmacy and Hospital Practice.	Practical Pharmacy and Hospital Practice.	Practical Pharmacy and Hospital Practice.	Practical Pharmacy and Hospital Practice.	Botany Demonstration. Practical Physiology.
1 to 2 p.m.	Physiology. 2nd Year.	Physiology. 2nd Year.	Physiology. 2nd Year.	Physiology 2nd Year.	Physiology. Demonstration. 1st and 2nd year men.	Histological Demonstration.
2 to 3 p.m.	* Materia Medica	Botany.	*Materia Medica.	Botany.		
3 to 4 p.m.	Physiology. 1st Year.	Physiology. 1st Year.	Physiology. 1st Year.	Physiology. 1st Year.	Histology.	
4 to 5 p.m.	Chemistry.	Chemistry. † Materia Medica 5 to 6	Chemistry.	Chemistry. †Materia Medica 5 to 6.	Chemistry.	Examination of Horses for Soundness.
8 to 10 p.m.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy,	

* Union Avenue. † McGill.

McGill Normal School.

The McGill Normal School in the city of Montreal is established chiefly for the purpose of training teachers for the Protestant population, or for all religious denominations of the province of Quebec other than the Roman Catholic. The studies in this school are carried on chiefly in English, but French is also taught.

Government of the School.

The Corporation of McGill University is associated with the Superintendent of Public Instruction in the direction of the McGill Normal School, under the regulations of the Protestant Committee of the Council of Public Instruction, and it is authorized to appoint a standing committee consisting of five members, called "The Normal School Committee," which shall have the general supervision of the affairs of the Normal School. The following members of the Corporation of the University constitute the committee of the Normal School for the Session of 1895-96.

NORMAL SCHOOL COMMITTEE.

The Principal of the University, *Chairman*.

Mr. Samuel Finley,
Mr. George Hague, } Governors of McGill College.

J. R. Dougall, M.A.,
Principal McVicar, D.D., LL.D., } Fellows of McGill University.

J. W. Brakenridge, B.C.L., *Acting Secretary*.

OFFICERS OF INSTRUCTION.

McGILL NORMAL SCHOOL.

SAMPSON PAUL ROBINS, M.A., LL.D., *Principal and Ordinary Professor of Mathematics, and Lecturer on Art of Teaching.*

ABNER W. KNEELAND, M.A., *Ordinary Professor of English Language and Literature.*

MADAME SOPHIE CORNU, *Professor of French.*

MISS GREEN, *Professor of Drawing.*

MR. R. J. FOWLER, *Instructor in Music.*

LILIAN B. ROBINS, B.A., *Assistant to the Principal, and Instructor in Classics.*

MR. W. H. SMITH, *Instructor in Tonic Sol-Fa.*

MR. JNO. P. STEPHEN, *Instructor in Elocution.*

T. D. REED, M.D., C.M., *Lecturer on Physiology and Hygiene.*

NEVIL N. EVANS, M.A.Sc., *Lecturer on Chemistry.*

BANNELL SAWYER, B.C.L., *Instructor in Penmanship and Bookkeeping.*

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

ORRIN REXFORD, B.Sc., *Head Master of Boys' School.*

MISS MARY J. PEEBLES, *Head Mistress of Girls' School.*

MISS LUCY H. DERICK, *Head Mistress of Primary School.*

ANNOUNCEMENT FOR THE SESSION 1895-96.

This Institution is intended to give a thorough training to teachers, by instruction and training in the Normal School itself, and by practice in the Model Schools; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The fortieth session of this School will commence on the second of September, 1895, and close on the thirty-first of May, 1896. The complete course of study extends over four years, and the Students are graded as follows :—

1.—*Elementary School Class.*—Studying for the Elementary School Diploma.

2.—*Model School Class.*—Studying for the Model School Diploma.

3.—*Academy Class.*—Studying for the Academy Diploma.

☞ All the following regulations and privileges apply to male and female students alike.

I. TERMS OF ADMISSION.

(Extracted from the Regulations of the Protestant Committee of the Council of Public Instruction.)

Any British subject who produces a certificate of good moral character from the minister of the congregation to which he belongs, and evidence to show that he has completed the sixteenth year of his age, may be admitted to examination for entrance in o the Elementary School Class, or, if he has completed his seventeenth year, to the entrance examinations of the Model School Class. (*See Note a.*)

Previous to admission to the Elementary School Class, every pupil-teacher shall undergo an examination as to his sufficient knowledge of reading, writing, the rudiments of grammar in his own language, geography and arithmetic; before admission to the Model School Class he must give proof of his knowledge of the subjects of the previous year. Except as stated below, the examination shall take place before the Principal, or before such other person as he may specially appoint for the purpose. (*See Note b.*)

All candidates who present certificates of having passed in Grade III. Model School Course, and all holders of Elementary School diplomas, shall be exempt from examination for admission to the Elementary Schc ol Class. All candidates who show that they have passed at the A.A. examination, taking two-thirds of the aggregate marks, and have passed in French, and all holders of Model School diplomas, shall be exempt from examination for admission to the Model School Class. Ho.ders of Elementary School diplomas, desiring admission to the Model School Class, shall be examined in Algebra, Geometry and French only.

Candidates shall be admitted to examination for entrance only at the times regularly appointed by the Principal of the school at the beginning of the session. Candidates exempt from examination can only be admitted during the first week of the session, except that teachers who may be actually engaged in teaching at the commencement of the session may, at the discretion of the Principal, be admitted to the Elementary School Class not later than the close of the Christmas vacation. No teacher-in-training admitted later than the first of October shall share in that part of the bursary fund which is distributed at Christmas.

In exceptional cases the Principal of the Normal School may admit to the classes on trial persons whose qualifications may be insufficient for entrance. Such persons may be excluded from the School by the Principal whenever he may judge it best so to do; but none shall be permitted to enter or to remain on trial after the semi-sessional examinations.

No candidate is admitted to the Normal School until the provisions of the school laws respecting admission have been fulfilled (*See Note c.*)

II. PRIVILEGES OF TEACHERS-IN-TRAINING.

All teachers-in-training are entitled to free tuition.

At the close of the semi-sessional examinations, the sum of $400 from the bursary fund will be divided among the forty most successful pupils who do not reside at home with parents or guardians during their attendance at the school. Similarly the sum of $800 will be divided at the close of the sessional examinations. The remainder of the bursary fund will be divided as an allowance for travelling expenses among teachers-in-training residing in the Province of Quebec at a distance of more than ninety miles from Montreal, in a proportion determined by the excess of distance above ninety miles, it being provided that no allowance for travelling expenses shall exceed ten dollars.

All teachers-in-training who pass the semi-sessional examinations in the Normal School with 60 per cent. of the total marks, and who have not fallen below 50 per cent. in any one of the groups of subjects, English, Mathematics, French and Miscellaneous, nor in any one of the subjects required by the Syllabus of Examination prescribed for diplomas of the grade to which they aspire, shall be entitled to continue in their classes after Christmas. Except by the special permission of the Principal, none other shall be entitled to this privilege nor to a share in the Christmas bursary.

All teachers-in-training, who attain the standards defined above at the final examinations of the Normal School, shall be entitled to diplomas of the grade of the class to which they belong, and except with the concurrence of the Principal of the school and the professor of each subject in which there has been failure, none others shall receive diplomas or share in the bursary fund.

All holders of Elementary School diplomas obtained by reaching the standards defined above shall be entitled to admission to the Model School Class, none others without the special permission of the Principal. Such holders of Elementary School diplomas as have taken not less than 75 per cent. of the total marks, nor less than 60 per cent. of those in any subject essential to the diploma, according to the Syllabus of Examination of the Protestant Committee of the Council of Public Instruction, shall be entitled to admission among the "selected students" mentioned in the following paragraph, but others may be so admitted by the Principal. (*See Note d.*)

III. STUDENTS FOR THE ACADEMY DIPLOMA.

The Academy Class in the Normal School having been abolished for some years, Academy Diplomas *in course* are no longer given by the McGill Normal School, but, under the regulations cited below, Academy Diplomas are granted to holders of Model School Diplomas from the Normal School, who become undergraduates of the Universities.

1. The Normal School shall bring up selected students at the end of the Model School year to the examinations for the entrance into the first year of the Faculty of Arts in the Universities. They may be examined either at the examinations for the Associate in Arts in June or at those for the matriculation in the autumn, and shall take the full course of study in the first and second years.

2. Such students shall be enrolled in the Normal School as students of the Academy Class, and shall be under the usual pledge to teach for three years. They shall engage in the practice of teaching at such times and in such schools as may be arranged by the Principal from time to time, in consistence with their college work, and shall be under the Principal and the regulations of the Normal School.

3. On report of the colleges which such students may be attending, that they have passed creditably in the Christmas and sessional examinations respectively, they shall be entitled to bursaries, not exceeding thirty dollars per session, in aid of fees and board. Such bursaries may be paid by the Normal School Committee out of any fund available for the purpose.

4. On passing the intermediate, or equivalent, examination of the

Universities, such students will be entitled to receive Academy Diplomas, in accordance with the regulations of the Protestant Committee of the Council of Public Instruction for such diplomas.

5. Such students may, with the advice of the Principal, attend classes at McGill or its affiliated colleges, or at Bishop's College, and the Normal School Committee shall make such arrangements as may be possible for free tuition at such colleges.

6. It shall be competent to the Principal of the Normal School to provide any tutorial assistance that may in his judgment be necessary for Academy students. Also, it shall be his duty in the case of optional studies to select for the students those required for the curriculum of the Normal School.

7. It shall be competent for students who have taken Academy Diplomas as above, to continue for two years longer at the University, or to return thereto, after teaching for a time, in order to take the degree of Bachelor of Arts; but they shall be held bound to fulfil their engagements to teach, and they shall not be entitled to bursaries. (*See Note e.*)

Holders of Model School Diplomas of the McGill Normal School who are certified by the Principal of the Normal School to have taken 75 per cent. of the total marks at their final examinations, with not less than 60 per cent. of the marks in Mathematics, French, Latin and Greek, respectively, will be admitted without further examination to the first year in Arts of the McGill University; but all such students must make good their standing in the University at the Christmas examinations.

Teachers-in-training, who do not attain the standard defined above, must, in order to enter the University, pass the usual examination for Matriculation.

Exemption from the payment of fees in McGill College for the first year will be granted to the three holders of Model School Diplomas, not being resident in Montreal, who, of all those entering the University on the conditions stated above, have gained the highest aggregate of marks at their final examinations in the Normal School, as certified by the Principal of the Normal School.

Exemption from fees in the second year will be granted to the three students entering from the Normal School, who, with creditable standing in all their examinations at the close of the first year

in Arts, have taken the highest aggregate of marks of any Normal School Students of their year.

IV. CONDITIONS OF CONTINUANCE IN THE NORMAL SCHOOL.

Teachers-in-training guilty of drunkenness, of frequenting taverns, of entering disorderly houses or gambling houses, keeping company with disorderly persons, or committing any act of immorality or insubordination, shall be expelled.

Each professor shall have the power of excluding from his lectures any Student who may be inattentive to his studies, or guilty of any minor infraction of the regulations, until the matter can be reported to the Principal. (*See Note c.*)

V. ATTENDANCE ON RELIGIOUS INSTRUCTION.

Teachers-in-training will be required to state with what religious denomination they are connected; and a list of the students connected with each denomination shall be furnished to one of the ministers of such denomination resident in Montreal, with the request that he will meet weekly with that portion of the teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

In addition to punctual attendance at weekly religious instruction, each student will be required to attend public worship at his own church, at least once every Sunday.

VI. BOARDING HOUSES.

1. The teachers-in-training shall state the place of their residence, and those who cannot reside with their parents will be permitted to live in boarding houses, but in such only as shall be specially approved of. No boarding houses having permission to board male teachers-in training will be permitted to receive female teachers-in-training as boarders, and *vice versa*. (*See Note g.*)

2. They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

3. They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

4. A copy of the regulations shall be sent to all keepers of lodging houses at the beginning of the session.

5. In case of lodgings being chosen by parents or guardians, a written statement of the parent or guardian shall be presented to the Principal.

6. All intended changes of lodgings shall be made known beforehand to the Principal or to one of the professors.

7. Boarding-houses shall be visited monthly by a committee of professors.

8. Special visitations shall be made in case of sickness being reported, either by professors or by ladies connected with the school; and, if necessary, medical attendance shall be procured.

9. Students and lodging house keepers are required to report, as soon as possible, all cases of serious illness and all infractions of rules touching boarding houses.

VII. ACADEMY DIPLOMAS TO GRADUATES.

Granted under the Regulations of the Protestant Committee of the Council of Public Instruction.

Graduates in Arts from any British or Canadian University, who have passed in Latin, Greek and French in the Degree Examinations, or who have taken at least second class standing in these subjects at their intermediate Examinations, shall be entitled to receive first class Academy diplomas, provided that they have also taken a regular course in the Art of Teaching at the McGill Normal School, or other public training institution outside the Province approved by the Protestant Committee.

Graduates who have not passed in French, as prescribed above, may, on application, be examined in that subject before the Principal of the McGill Normal School, and, if satisfactory, such examination shall be accepted in lieu of the prescribed standing in French in the University examinations.

To meet the requirements of Graduates and Undergraduates in Arts, who, not having previously taken a Normal School course, desire to receive Academy diplomas of the first class under regulation 54, provision has been made for the delivery of a course of forty lectures on Pedagogy in the Normal School and

for practice in teaching in the McGill Model School for forty half days, open to Graduates in Arts of any British or Canadian University, to undergraduates of the third year, and with the permission of the Faculty and the concurrence of the Principal of the Normal School, to those of the fourth year.

Undergraduates will be permitted to teach the forty half days referred to above, at times extending over the sessions of the Model School, corresponding to the third and fourth years of their college course. Graduates will be permitted to teach in the Model Schools at such times as may be agreed on with the Principal.

All persons taking this course of study in the Normal School shall be held to be subject to the regulations of the said school, and to be under the supervision of its Principal while in attendance thereat.

Graduates who have taken the above course of study in Pedagogy, and the first class Academy diploma, may be entered, if so desired by them, in the published lists of the University as holders of such diplomas.

Undergraduates who hold Model School diplomas in course from the McGill Normal School, who take at least second class standing in Latin and Greek in the Intermediate Examination of the Universities, shall be entitled to receive first class Academy diplomas.

Teachers who hold (*a*) Academy diplomas granted before the 1st July, 1886, or (*b*) second class Academy diplomas granted under these regulations, and who produce satisfactory proof to the Protestant Committee that they have taught successfully for at least ten years, shall, when recommended by the Committee, be entitled to receive first class Academy diplomas.

Any candidate who presents to the Principal of the McGill Normal School, (*a*) the requisite certificates of age and of good moral character, according to Form No. 1, below, and (*b*) satisfactory certificates that he has complied with either of the foregoing regulations, shall be recommended by him to the Superintendent of Public Instruction for an Academy diploma of the class to which he is entitled under these regulations.

FORM OF CERTIFICATE OF CHARACTER TO BE SUBMITTED BY CANDIDATES FOR ACADEMY DIPLOMAS.

"This is to certify that I, the undersigned, have personally known and had opportunity of observing ..... for the ..... last past; that during all such time *his* life and conduct have been without reproach; and I affirm that I believe *him* to be an upright, conscientious, and strictly sober *man*."

This certificate must be signed by the Minister of the Congregation to which the Candidate belongs, and by two School Commissioners, Trustees or Visitors.

VIII. NOTES ON THE PRECEDING REGULATIONS.

Chiefly extracted from the By-Laws of the McGill Normal School.

(*a*) On application to the Principal of the School, candidates for admission will be furnished with forms of application, containing the required forms of certificate of good character and of agreement to teach for three years in some Public School in the Province of Quebec.

(*b*) Teachers-in-training admitted to the Elementary School class at the beginning of a session must be able to parse correctly a simple English sentence; to write a neat dictation from any school reader, with no more than five per cent. of mistakes in spelling, in the use of capitals, and in the division of words into syllables; to give the names and state the positions of the continents, of the oceans, of the greater islands, peninsulas, capes, mountains, gulfs, bays, straits, lakes, rivers, and the chief political divisions and most important cities of the world; and to work correctly examples in the simple rules of arithmetic and in fractions.

(*c*) Teachers-in-training are expected to give their whole time and attention to the work of the school, and are not permitted to engage in any other course of study or business during the session of the school.

There shall be no intercourse between male and female teachers-in-training while in school or when going to or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

Teachers-in-training who leave the Normal School in the middle of a session are expected to assign to the Principal satisfactory reason, accompanied, in case of failure of health, by medical certificates.

(*d*) The J. C. Wilson prize of forty dollars and a book, annually chosen by the donor, shall be given to that teacher-in-training of the Elementary School class who passes for a diploma, and takes the highest aggregate of marks at the final examination of the year.

The Prince of Wales' medal and prize shall be given to that teacher-in-training of the Model School class who passes for a diploma, and takes the highest aggregate of marks at the final examination of the year.

(*e*) In order to be recognized as teachers-in-training for the Acadamy diploma, Students who have fulfilled the conditions stated in the regulations of the Protestant Committee of the Council of Public Instruction must apply at the beginning

of each collegiate year to the Principal of the Normal School for enrolment, and for certificates of enrolment to be presented to the Dean of the Faculty of Arts. Having entered college, they must report to the Principal of the Normal School from time to time, as he may require, and must furnish him with certificates of having successfully passed their several examinations, without which certificates, signed by the Dean of the Faculty or his representative, no bursaries shall be paid. It is held that no student who has passed lower than second class in two of the four subjects, Mathematics, Latin, Greek and French, or who has failed in any one of these subjects, has passed "creditably" at any college examination. But in order to be entitled to a first class Academy diploma, or to receive a bursary at the end of the second year, it is necessary to pass at least second class in Latin and Greek at the Intermediate Examinations.

(*f*) The date of the examination of graduates in Arts for Academy diplomas shall be the 20th day of May, or the school day next succeeding that date; the hours shall be from 10 a.m. to 12 noon.

(*g*) No boarding house is attached to the institution, but every care will be taken to ensure the comfort and good conduct of the Students in private boarding houses approved by the Principal, who will furnish lists to applicants for admission. Board can be obtained at from $12 to $16 per month,

IX. COURSE OF STUDY.

N. B.—The subjoined Course of Study has been designed, and all instruction in it is given with express reference to the work of teaching.

1. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

With the view of accommodating teachers actually in charge of schools at the commencement of the Session, and whose previous education may enable them to enter at a more advanced period, the course of study in this class is divided into terms as follows:

FIRST TERM, from September 1st to December 31d.

(*Entrance Examination as stated above.*)

English.—The structure of sentences. Orthography and orthoepy. Penmanship. The study of Milton's L'Allegro, and the sermon on the Mount, Matt. V, VI and VII.

Geography.—General view of continents and oceans. North and South America. Eléments de Géographie moderne.

History.—Outline of general history. Histoire du Canada en Français.

Arithmetic.—Simple and compound rules.

Algebra.—The elementary rules.

Geometry.—Elementary notions, with Mensuration.

French.—Darey's Principes de Grammaire Française to page 50, with verbs of first conjugation. Méthode naturelle.

Botany.—High School Botany, Spotton.

Chemistry.—Lectures.

Reading and Elocution.

Drawing.—Elements, simple outlines and map drawing.

Music.—Vocal music with part songs. Junior Certificate of Tonic Sol-Fa College.

Art of Teaching.—Lectures on school organization and discipline, and on methods of teaching particular subjects.

SECOND TERM, January 6th to end of Session.

(*No pupils will be received after the commencement of this term. Those who enter must pass the examination of the class in the work detailed above.*)

English.—Structure of words and sentences. Etymology, derivation and syntax. Study of Macaulay's Essay on Milton and of Goldsmith's Deserted Village.

Geography.—Contour, elevations, river systems, political divisions and chief cities of the old world.

History.—Sacred. Histoire du Canada continuée.

Arithmetic.—Fractions, Decimals, Proportion, Interest, Properties of Numbers.

Book-keeping.—Single Entry.

Algebra.—Simple equations of one unknown quantity, with problems.

Geometry.—First book of Euclid, with deductions.

Art of Teaching.—Lectures continued.

French.—Principes de Grammaire Française, page 100, with verbs regular and irregular. Méthode naturelle.

Botany.—High School Botany, Spotton.

Physiology and Hygiene.—Lectures.

Reading and Elocution.

Drawing.—Freehand drawing from the solid, and elements of perspective.

Music.—Elements of vocal music and part songs. Elementary Certificate of Tonic Sol-Fa College.

Practice in Teaching in the McGill Model Schools, as directed by the Principal.

Religious Instruction will be given throughout the Session.

In addition to the text-books named above, each Student of the Elementary School Class must be provided with an Atlas of recent date, an Arithmetic, an Algebra and a Euclid.

2. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

Students entering the School in this second year must have passed a satisfactory examination in the subjects of the Elementary School Class. The Class will pursue its studies throughout the Session, without division into terms.

English.—Principles of grammar and composition. Style. History of the English Language. Study of Shakespeare's Tempest, Scott's Lady of the Lake, Tennyson's Lotus Eaters.

Geography.—Mathematical and physical. Use of the globes.

History.—Greece, England.

Art of Teaching.—Lectures on school organization and discipline, and on methods of teaching particular subjects.

Arithmetic.—Commercial arithmetic. Logarithms.

Book-keeping.—Double entry.

Algebra.—Equations of more than one unknown quantity, and quadratics.

Geometry.—Second, third and fourth books of Euclid, with application to mensuration.

Object Lessons.

Latin.—Grammar; Cæsar, Gallic War, Book I.

French.—Translation from French into English, and from English into French. Darey's Principes de Grammaire. Eléments de Littérature française, Lectures françaises, Méthode Berlitz, Histoire de France.

Agricultural Science.—Principles, especially chemical and botanical, and application to Canadian agriculture.

Elocution.

Drawing.—Elements of perspective, drawing from the cast and map drawing.

Music.—Instrumental music, part songs and rudiments of harmony. Intermediate Certificate of Tonic Sol-Fa College.

Practice in Teaching.—In the McGill Model Schools, as directed by the Principal.

Religious Instruction throughout the Session.

Such Students as, from their conspicuous ability and preparation, may be selected to enter the Academy Class of the Normal School, will, in addition to the work given above, read Xenophon, Anabasis, Book I., and Virgil, Æneid, Book I., with special attention to Greek and Latin Grammar.

Other Students of exceptional ability may, with the consent of the Principal and the Professors of the several subjects, choose one of the following courses of extra study :—

(*a*) Mathematics : trigonometry.
(*b*) Old English.
(*c*) French : classiques françaises, composition et grammaire.
(*d*) Drawing : water-color.
(*e*) Music : violin.

In addition to the text-books named above, each Student of the Model School Class must be provided with an Arithmetic, an Algebra, a Euclid, and Dawson's Scientific Agriculture.

3. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA.

Will follow two years the course of McGill University and its affiliated colleges, or that of Bishop's College, Lennoxville, being enrolled on the books of the Normal School, and receiving a bursary from the Normal School, not exceeding $30 per annum, and such tutorial assistance as may be deemed necessary. Such Students must take in their courses such options only as are approved by the Principal of the Normal School.

The course for the current year in the McGill College, for first year Students, is :—

Greek.—Homer, Odyssey Book XI. Xenophon, Hellenics, Book I. Studies in History and Literature.

Latin.—Cicero, De Amicitia. Sallust, Catiline. Virgil, Æneid, Bk.—Translation at sight. Studies in History and Literature. Latin Prose Composition.

Mathematics.—Arithmetic. Euclid, six books. Algebra to end of Quadratic Equations. Plane Trigonometry, in part.

English Literature.—Two lectures a week. The course will present an outline of English Literature from the Anglo Saxon period to the present day.

The course for second year Students is :—

Greek.—Plato, Apology. Æschylus, Prometheus Vinctus. History of Greece.

Latin.—Horace, Epistles, Bk. I., 1 to 7. Livy, Bk. XXI. Translation at sight, and Latin Prose Composition.

Mathematics.—Arithmetic, Euclid, Algebra and Trigonometry as before. Logarithms. Plane Trigonometry, including solution of triangles and applications.

Mathematical Physics.—Mechanics, one lecture a week.

European History.—The Political History of Europe from 1789 to the present day.

Psychology and Logic.—First Term Elementary Psychology (*Text-Book :* Murray's Handbook of Psychology, Book I.). Second Term, Logic (*Text Book :* Jevon's Elementary Lessons in Logic).

French.—Ponsard, l'Honneur et l'Argent. Racine, Esther. Contanseau, Précis de Littérature Française depuis son origine jusqu'à la fin du XVIIe siècle. Translation into French :—Dr. Johnson, Rasselas, Dictation, Parsing, Colloquial exercises.

The course in Bishop's College for the current year may be learned on application to the Rev. Principal Adams, D.C.L., Lennoxville.

SYLLABUS OF LECTURES ON PEDAGOGY.

(Open to Graduates and Undergraduates.)

THE LEGAL POSITION OF THE TEACHER.

1. The organization of Public Instruction in Quebec. 2. The relation of the teacher to the Department of Public Instruction and to the Protestant Committee

of the Council of Public Instruction. 3. The relation of the teacher to school commissioners and parents. 4. The relation of the teacher to pupils. 5. The teacher as a member of a profession.

Discipline.

6. Discipline as a means of immediate pleasure to pupils. 7. Discipline as tending to school success. 8. Discipline as a preparation for life. 9. Discipline developing character. 10. Discipline enforced by authority.

Instruction in Special Subjects.

11. English reading, writing, grammar. 12. Literature, composition. 13. French. 14. The classics. 15. Number; arithmetic and algebra. 16. Form; geometry. Number and form; trigonometry and mensuration. 17. Geography and history. 18. Botany and chemistry. 19. Drawing and music. 20. The acquisition of general knowledge.

Physical Development.

21. Health. 22. Growth. 23. The training of the eye. 24. The training of the ear. 25. The training of the hand.

Mental Development.

26. The training of the analytic faculty. 27. Observation and experiment. 28. The training of the synthetic faculty. 29 Understanding. 30. Judgment and reason. 31. Invention. 32. Imagination. 33. Memory of sensations. 34. Memory of conceptions. 35. Verbal memory.

Moral Development.

36. Training in truthfulness. 37. In justice and purity. 38. In philanthropy and patriotism. 39. In earnestness. 40. In good manners.

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

Boys' School.—Orrin Rexford, B.Sc., *Head Master.*
Elizabeth Reid,
Emma M. Williams, } *Assistants.*

Girls' School.—Mary I. Peebles, *Head Mistress.*
Selina F. Sloan,
Ethel Stuart,
Gertrude Blackett, } *Assistants.*

Primary School.—Lucy H. Derick, *Head Mistress.*
Annie L. Woodington,
Clara L. Douglas, } *Assistants.*
Louise Derick, *Kindergarten.*

These Schools can accommodate about 400 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of four and upwards, and give a thorough English education. Fees: Boys' and Girls' Model Schools $1.00 to $1.50 per month; Primary School and Kindergarten, 75c; payable monthly in advance.

University School Examinations

1896.

FOR CERTIFICATES OF THE UNIVERSITIES AND THE TITLE OF ASSOCIATE IN ARTS.

HELD UNDER THE SUPERINTENDENCE OF MCGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE; AND RECOGNIZED BY THE PROTESTANT COMMITTEE OF THE COUNCIL OF PUBLIC INSTRUCTION.

These Examinations are held in Montreal and at Lennoxville; and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with the names of satisfactory Deputy Examiners, and guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls from any Canadian school.

PART I.—ORDINARY A.A.

SUBJECTS OF EXAMINATION.

I. PRELIMINARY SUBJECTS.

Writing.

English Dictation.

English Grammar, including Easy Analysis.

Arithmetic (all the ordinary rules, including Square Root and a knowledge of the Metric System).

Geography (acquaintance with the maps of each of the four continents, and of British North America).

British History and *Canadian History.*

*New Testament History** (Gospels and Acts, as in Maclear).

---

*Candidates will be exempted from examination in this subject only if their parents or guardians make written objection thereto. In such case an alternative subject may be required in 1896 and thereafter, particulars of which may be had on application to the Secretary.

II. Optional Subjects.

Section 1.—Languages.

Latin :—

Caesar.—Bell. Gall., Bks. I. and II. Virgil.—Aeneid, Bk. I. Latin Grammar and Prose Composition (Collar's Practical Latin Composition, Part III, Book I., or an equivalent).	200 marks

Greek :—

Xenophon.—Anabasis, Bk. I. Homer.—Iliad, Bk. IV. Greek Grammar.	200 do

French :—

Grammar and Dictation. Translation at sight. Easy translation, English into French.	100 do

German :—

Grammar. Joynes' German Reader, pages 1-80, Sections I. and II. Translation from German into English.	100 do

Section 2.—Mathematics.

Geometry :—

Euclid, I., II., III., with easy Deductions	100 do

Algebra :—

Elementary Rules, Involution, Evolution, Fractions, Indices, Surds, Simple and Quadratic Equations of one or more unknown quantities.	100 do

Plane Trigonometry :—

(As in Hamblin-Smith, pp. 1-100, omitting Ch. XI).	100 do

Section 3.—English.

The English Language :—

Meiklejohn's English Language, Parts I., II., III. Trench's Study of Words.	100 do

English Literature :—

Meiklejohn's English Language, Pt. IV. Shakspere, Julius Caesar. Scott's Lady of the Lake.	100	do
History.—(as in Primers of Greece aud Rome, and Collier's Great Fvents)	100	do
Geography.—Physical, Political and Commercial	100	do

Section 4.—Natural and Physical Sciences, etc.

Zoology (as in Nicholson's Introductory Text-Book)	100	do
*Botany** (as in Spotton's High School Botany, with Penhallow's Guide to the Collection of Plants, and Blanks for Plant Descriptions †)	100	do
Chemistry (as in Remsen's Elements of Chemistry, pp. 1 to 160)	100	do
Physiology and *Hygiene* (as in Cutter's Intermediate)	100	do
Physics (as in Gage and Fessenden's High School Physics, Chapters I., II., III.)	100	do
Geometrical and Freehana Drawing	100	do

Geometrical.—Vere Foster R^1 and R^2, also problems 119 129 of R^3.

Freehand,—Rules of Perspective, Drawing from the object (as in the Dominion Freehand Drawing books, numbers 1 to 5, inclusive).

REGULATIONS.

1. To obtain the Certificate of Associate in Arts, Candidates must pass in all the Preliminary subjects, and also in any six of the Optional subjects, provided that the six include one subject at least from each of the four Sections.

2. In addition to the six Optional subjects selected for passing, Candidates may take other Optional subjects, but the total possible number of marks obtainable in all the Optional subjects chosen must not exceed 1000.

3. Candidates will not be considered as having passed in any subject, unless they have obtained at least 40 per cent. of the total number of marks obtainable in that subject.‡

---

* In connection with the Botany examination, marks will be given for collections of mounted specimens made in accordance with Penhallow's Guide to the Collection of Plants. The Head Teacher of each school will forward with the answers a specimen from each pupil's collection, and also (on a furnished form) a detailed statement as to the collections made. Not more than 50 specimens will be expected to constitute a collection, and marks may be allowed *pro rata* for fewer.

† These Blanks may be obtained from booksellers in Montreal or elsewhere.

‡ When *two or more books or subjects are prescribed for one examination it is necessary to pass in each.* Candidates will not be allowed to pass in the Preliminary Grammar, unless they show a satisfactory knowledge of Syntax (Parsing, Analysis, and questions connected therewith). In Classics, at least one-third of the marks allotted to grammar must be obtained.

4. The total number of marks gained by every Candidate in the Optional subjects shall be added up, and the Candidates arranged in order of merit in a printed list at the close of the Examination, those who are over 18 years of age on the first day of June being in a separate list. The marks in any subject shall not be counted if the Candidate has obtained less than 40 per cent. in that subject.

5. Candidates who obtain at least 75 per cent. of the marks in any Optional subject shall be considered as having answered creditably in that subject, and special mention of the same will be made in the Associate in Arts Certificate.

6. Candidates who pass in the subjects of the University Matriculation Examinations may, without further examination, enter the Faculties of Arts and Applied Science. (See Note 2 *infra*.)

7. Candidates who fail, or who may be prevented by illness from completing their examination, may come up at the next examination without extra fee.

8. Candidates who pass in all the Preliminary subjects may, at any subsequent examination, take the Optional subjects only, and without extra fee.

9. The Head Master or Mistress of each school must certify to the character and ages of the pupils sent up for examination.

10. The examinations will begin on Monday, June 1st, at 9 a.m.

11. Lists of the names, ages, and Optional subjects to be taken by the Candidates, together with a fee of $4 for each Candidate, must be transmitted to the Secretary, McGill University, Montreal, on or before May 1st. (Blank forms and copies of the regulations will be furnished on application.)

NOTE 1.—No fees will be exacted for the examination of pupils of Academies under the control of the Protestant Committee; but in order to obtain the certificate from the Universities, the prescribed fee, viz., $4, must be paid to the Secretary of the University Examiners.

Candidates who pass Grade II of the Academy Course of Study will be exempted from the Preliminary Subjects of the A.A. Examination.

The answers must be written in the answer book, specially made for the purpose, under the direction of the Board of Examiners.

The complete regulations of the Protestant Committee of the Council of Public Instruction with reference to these examinations may be obtained on application to the English Secretary, Department of Public Instruction, Quebec.

NOTE 2.—MATRICULATION SUBJECTS REFERRED TO IN REG. 6.

In Arts.—Greek, Latin, Geometry, Algebra, Arithmetic, English Dictation, English Grammar, British History. (Women may substitute French for Greek.)

In Applied Science.—Geometry (Euclid, Bks. I. to IV., VI., and definitions of Bk. V.), Algebra, Trigonometry, rithmetic, English Dictation, English Grammar, British History.

After entrance iu Arts or Applied Science, French or German must be studied. In the former subject an entrance examination is required, but may be passed either in June or in September; Candidates who are unable to pass must study German after entrance. Women who omit Greek must pass the entrance examination in French and German, and afterwards study both French and German.

[Matriculation Examinations are also held at the opening of the University Session in September. See Calendars of the Universities.]

PART II.—ADVANCED A.A.

SUBJECTS OF EXAMINATION.

I. Preliminary Subjects.

As under Part I.

II. Optional Subjects.

Section 1.—Languages.

Latin :—

Virgil.—Aeneid, I.
Cicero.- In Catilinam, I. and II.
Grammar, Prose Composition (Collar's Practical Latin Composition, Parts III. and IV.), and Translation at sight from Caesar and Nepos.

Greek :—

Xenophon.—Anabasis, I. and II.
Homer.—Iliad, IV., and Odyssey, VII.
Grammar and Prose Composition (Abbott's Arnold's Greek Prose Composition, Exercises 1 to 25).

French :—

Lamartine, Jeanne d'Arc.
Molière, Le Bourgeois Gentilhomme.
Translation at sight from French into English, and from Englsh into French.
Grammar and Dictation.

German :—

Lessing, Emilia Galotti.
Schiller, Der Kampf mit dem Drachen.
Grammar and translation from English into German.

Section 2.—Mathematics.

Geometry :—

Euclid, Bks. I. to IV., Defns. of Bk. V., Bk. VI.

Algebra :—

To the end of Progressions.

Trigonometry :—

As in Hamblin Smith (the whole).

Section 3.—English.

The English Language :—

Lounsbury's History of the English Language.
Mason's English Grammar.
A Composition.

English Literature :—

Meiklejohn's English Language, Pt. IV.
The Elizabethan Period (Morley's First Sketch).
Milton's Paradise Most, Bks. I and II.

History:—

Grecian History.—The Persian and Peloponnesian Wars.
Roman History.—From the Wars of Marius and Sulla to the death of Tiberius.
English History.—The Reformation and Puritan England, as in Green's Short History.

Section 4.—Natural and Physical Sciences, etc.

Botany :—Gray's Text-Book.
General Morphology and Classification, Determination of Canadian Species exclusive of Thallophytes. Distribution of Orders represented in Canada,

Credit will be given for collections of plants as under Part I.

Chemistry :—Inorganic, as in Remsen's Elements.
Also, an examination in Practical Work (to be held only in Montreal and at Lennoxville).

Physics :—As in Gage and Fessenden's High School Physics.
Also, an examination in Practical Work (to be held only in Montreal and at Lennoxville).

Drawing:—Orthographic Projection, including Simple Penetrations, Developments and Sections, as in Davidson's Orthographic Projection.

REGULATIONS.

The Regulations of Part I., with the following modifications and additions, will apply to the advanced subjects :—

1. Candidates who pass in six of the advanced subjects (including one at least from each of the four Sections) will receive an Advanced A A. certificate. The number of marks given to each subject will be the same as in Part I., and additional advanced subjects may be taken as in Reg. 2, Part I.

2. Candidates who fail in one or more of the subjects required for the advanced A.A. may, on the recommendation of the Examiners, be given an ordinary A.A. certificate.

3. The examinations in the advanced subjects will be held at the same time and in the same manner as those in the ordinary subjects. They will be open to all who have already passed in the preliminary subjects, whether they have taken the ordinary A.A. or not. The preliminary subjects must be taken either one or two years before the advanced subjects.

4. Candidates who pass the advanced examinations in Greek, Latin, Geometry, Algebra, and English Language* shall be considered as having passed the Higher Matriculation Examination of the First Year in Arts, McGill University.

5. Candidates must, before May 1st, give notice of intention to present themselves for the examination, specifying the optional objects in which they wish to be examined.

6. The ordinary fee of $4.00 must be paid before taking the preliminary subjects, and an additional fee of $10 at the time of making application for the advanced examinations.† A Candidate who fails to pass the Advanced A.A. Examination shall be required to pay a fee of $5 for every subsequent Advanced A.A. Examination at which he may present himself.

---

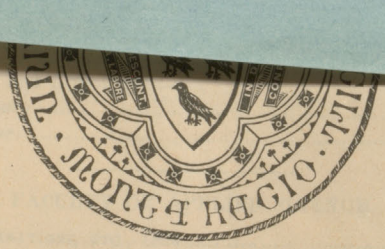
* French as in Part I., Note 2.

† Candidates from Academies under the control of the Protestant Committee of the Council of Public Instruction are exempt from the former fee, but not from the latter.

ACADEMY OF NATURAL SCIENCES
OF PHILADELPHIA

For Class Lists for 1894-95, apply to Office of Deans.

MCGILL UNIVERSITY LIBRARY



SESSION OF 1894-5.

Montreal:
PRINTED BY JOHN LOVELL & SON,
ST. NICHOLAS STREET.
1895.

EXAMINATION PAPERS

OF THE

McGILL UNIVERSITY,

MONTREAL.

SESSION OF 1894-5.

Montreal:
PRINTED BY JOHN LOVELL & SON,
ST. NICHOLAS STREET.
1895.

ORDER OF EXAMINATION PAPERS.

1. FACULTY OF ARTS.

ENTRANCE, EXHIBITION, AND SCHOLARSHIP EXAMINATIONS, 1894 ..... PAGE 3

SESSIONAL EXAMINATIONS, 1895.

CLASSICS :—*Ordinary* 85
" *Honour* 110
MATHEMATICS AND NATURAL PHILOSOPHY :—*Ordinary* 139
" " " " *Honour* 150
ENGLISH LANGUAGE AND LITERATURE :—*Ordinary* 163
" " " *Honour* 172
LOGIC, MENTAL AND MORAL PHILOSOPHY :—*Ordinary* 194
" " " " *Honour* 196
FRENCH :—*Ordinary* 205
" *Honour* 211
GERMAN :—*Ordinary* 217
" *Honour* 223
HEBREW 228
NATURAL SCIENCE (Chemistry—Botany—Zoology—Geology—Mineralogy and Lithology) :—
Ordinary 237
Honour 243

2. FACULTY OF APPLIED SCIENCE.

ENTRANCE EXAMINATIONS, ETC., 1894 77
MATHEMATICS, ETC 255
MACHINERY, ETC 262
PRACTICAL CHEMISTRY, MINING, ETC 272
ENGINEERING 278
MODERN LANGUAGES, NATURAL AND PHYSICAL SCIENCE.—(*See Arts Examinations.*)

3. FACULTY OF LAW 285

4. UNIVERSITY SCHOOL EXAMINATIONS.

PRELIMINARY SUBJECTS 301
OPTIONAL SUBJECTS 309

McGILL UNIVERSITY.

MONTREAL.

ENTRANCE, EXHIBITION AND SCHOLARSHIP EXAMINATIONS,

SEPTEMBER, 1894.

FACULTY OF ARTS.

FIRST YEAR ENTRANCE.

GREEK.

MONDAY, SEPT. 17TH:—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A., PH.D.
Assistant-Examiner,.....JOHN L. DAY, B.A.

[NOTE.—Candidates will do (A), translate *one* of the passages (B), and answer the questions printed below that passage.]

(A.)

1. Decline in all numbers, *βασιλεύς, γόνυ, πολίτης, ἀνήρ*: in the singular only, *ὁδος, λέων*: in the plural only, *βούς, φῶς, ἡ μεγάλη χώρα.*

2. Define terms *base* and *stem*, and give the stem of *ὄρνις, παῖς, ὀδούς, γένος.*

3. Compare *μέλας, ταχύς, σοφός, ἡδύς.* Form and compare adverbs from the last two.

4. Decline *ὅστις, οἵτος.*

5. Write down the principal parts of *πίπτω, φέρω, ἀγγέλλω, ἄγω, φαίνω.*

6. Inflect *λείπω* in the second aorist middle; *τίθημι* in the imperative active; and *εἰμί* in the present indicative and subjunctive.

7. (*a*) Distinguish *αὐτὸς ὁ ἀνὴρ* and *ὁ αὐτὸς ἀνήρ.* (*b*) How are *patronymics* formed, and what do they denote?

8. What do you mean by a "final clause"? How are such clauses expressed in Greek.

9. Translate into Greek:—(1) The queen collected a small army. (2) The place was narrow. (3) Cyrus was a brave general. (4) He led the horse into the river. (5) They will lead the hoplites into a friendly country.

B.

I. (*a*) Ἄνδρες, ἐάν μοι πεισθῆτε, οὔτε κινδυνεύσαντες οὔτε πονήσαντες τῶν ἄλλων πλέον προτιμήσεσθε στρατιωτῶν ὑπὸ Κύρου, τί οὖν κεχεύω ποιῆσαι; νῦν δεῖται Κῦρος ἕπεσθαι τοὺς Ἕλληνας ἐπὶ βασιλέα· ἐγὼ οὖν φημί ὑμᾶς χρῆναι διαβῆναι τὸν Εὐφράτην ποταμὸν πρὶν δῆλον εἶναι ὅ τι οἱ ἄλλοι Ἕλληνες ἀποκρινοῦνται Κύρῳ. Ἢν μὲν γὰρ ψηφίσωνται ἕπεσθαι, ὑμεῖς δόξετε αἴτιοι εἶναι ἄρξαντες, τοῦ διαβαίνειν, καὶ ὡς προθυμοτατοις οὐσιν ὑμῖν χάριν εἴσεται Κῦρος καὶ ἀποδώσει· ἐπίσταται δ' εἴ τις καὶ ἄλλος· ἢν δ' ἀποφηφίσωνται οἱ ἄλλοι, ἄπιμεν μὲν ἅπαντες εἰς τοὔμπαλιν, ὑμῖν δὲ ὡς μόνοις πειθομένοις πιστοτάτοις χρήσεται καὶ εἰς φρουρια καὶ εἰς λοχαγίας, καὶ ἄλλου οὑτινος ἂν δέησθε οἶδα ὅτι ὡς φιλου τεύξεσθε Κύρου.

(*b*) Κῦρος μὲν οὖν οὕτως ἐτελεύτησεν, ἀνὴρ ὢν Περσῶν τῶν μετὰ Κῦρον τὸν ἀρχαῖον γενομένων βασιλικώτατός τε καὶ ἄρχειν ἀξιώτατος, ὡς παρὰ παντων ὁμολογεῖται τῶν Κύρου δοκούντων ἐν πείρᾳ γενέσθαι. Πρῶτον μὲν γὰρ ἔτι παῖς ὤν, ὅτ' ἐπαιδεύετο καὶ σὺν τῷ ἀδελφῷ καὶ σὺν τοῖς ἄλλοις παισί, πάντων πάντα κράτιστος ἐνομίζετο. Πάντες γὰρ οἱ τῶν ἀρίστων Περσῶν παῖδες ἐπὶ ταῖς βασιλέως θύραις παιδεύονται· ἔνθα πολλὴν μὲν σωφροσύνην καταμάθοι ἄν τις, αἰσχρὸν δ' οὐδὲν οὔτ' ἀκοῦσαι οὔτ' ἰδεῖν ἔστι. Θεῶνται δ' οἱ παῖδες καὶ τοὺς τιμωμένους ὑπὸ βασιλέως καὶ ἀκούουσι, καὶ ἄλλους ἀτιμαζομένους· ὥστε εὐθὺς παῖδες ὄντες μανθάνουσιν ἄρχειν τε καὶ ἄρχεσθαι.

XENOPHON, ANAB., Bk. I.

(α) Explain the construction of τοῦ διαβαίνειν, in ext. (α) What does it resemble in Latin?

(β) Give the principal tenses of μανθάνω, τυγχάνω ἀκούω, ἰδεῖν.

(γ) What is the case and the force of πάντα in extract (b) before the word κράτιστος?

II. Μετὰ ταῦτα ἀριστήσαντες καὶ διαβάντες τὸν Ζαπάταν ποταμὸν ἐπορεύοντο τεταγμένοι, τὰ ὑποζύγια καὶ τὸν ὄχλον ἐν μέσῳ ἔχοντες. οὐ πολὺ δὲ προεληλυθότων αὐτῶν ἐπιφαίνεται πάλιν ὁ Μιθριδάτης, ἱππέας ἔχων ὡς διακοσίους καὶ τοξότας καὶ σφενδονήτας ὡς τετρακοσίους μάλα ἐλαφροὺς καὶ εὐζώνους. Καὶ προσῄει μὲν ὡς φίλος ὢν πρὸς Ἕλληνας, ἐπεὶ δ' ἐγγὺς ἐγένετο, ἐξαπίνης οἱ μὲν αὐτῶν ἐτόξευον καὶ ἱππεῖς καὶ πεξοί, οἱ δ' ἐσφενδόνων καὶ ἐτίτρωσκον. οἱ δὲ ὀπισθοφύλακες τῶν Ἑλλήνων ἔπασχον μὲν κακῶς, ἀντεποίουν δ' οὐδέν· οἵ τε γὰρ Κρῆτες βραχύτερα τῶν Περσῶν ἐτόξευον καὶ ἅμα ψιλοὶ ὄντες εἴσω τῶν ὅπλων κατεκέκλειντο, οἵ τε ἀκοντισταὶ βραχύτερα ἠκόντιζον ἢ ὡς ἐξικνεῖσθαι τῶν σφενδονητῶν. Ἐκ τούτου Ξενοφῶντι ἐδόκει διωκτέον εἶναι. καὶ ἐδίωκον τῶν ὁπλιτῶν οἵ ἔτυχον σὺν αὐτῷ ὀπισθοφυλακοῦντες· διώκοντες δὲ οὐδένα κατελάμβανον τῶν πολεμίων.

XEN. ANAB. Bk. III

(1) τεταγμένοι: give the principal parts of this verb. (2) Construction of προεληλθότων? Principal parts. (3) Derivation of εὐζώνους. (4) Explain the case of βραχύτερα, σφενδονητῶν. (5) διωκτέον: remark on this construction. Give the corresponding construction in Latin.

III. Ἀλλὰ μέντοι, ἔφη ὁ Χειρίσοφος, "κἀγὼ ὑμᾶς τοὺς Ἀθηναίους ἀκούω δεινοὺς εἶναι κλέπτειν τὰ δημόσια, καὶ

μάλα ὄντος δεινοῦ τοῦ κινδύνου τῷ κλέπτοντι, καὶ τοὺς κρατίστους μέντοι μάλιστα, εἴπερ ὑμῖν οἱ κράτιστοι ἄρχειν ἀξιοῦνται. ὥστε ὥρα καὶ σοὶ ἐπιδείκνυσθαι τὴν παιδείαν." "Ἐγὼ μὲν τοίνυν," ἔφη ὁ Ξενοφῶν, "ἕτοιμός εἰμι τοὺς ὀπισθοφύλακας ἔχων, ἐπειδὰν δειπνήσωμεν, ἰέναι καταληψόμενος τὸ ὄρος. Ἔχω δὲ καὶ ἡγεμόνας. οἱ γὰρ γυμνῆτες τῶν ἑπομένων ἡμῖν κλωπῶν ἔλαβόν τινας ἐνεδρεύσαντες· τουτων καὶ πυνθάνομαι, ὅτι οὐκ ἄβατόν ἐστι τὸ ὄρος, ἀλλὰ νέμεται αἰξὶ καὶ βουσὶν. ὥστε, ἐάνπερ ἅπαξ λάβωμόν τι τοῦ ὄρους, βατὰ καὶ τοῖς ὑποξυγίοις ἔσται. Ἐλπίζω δὲ οὐδὲ τοὺς πολεμίους μενεῖν ἔτι, ἐπειδὰν ἴδωσιν ἡμᾶς ἐν τῷ ὁμοίῳ ἐπὶ τῶν ἄκρων· οὐδὲ γὰρ νῦν ἐθέλουσι καταβαίνειν εἰς τὸ ἴσον ἡμῖν."

XEN. ANAB., Bk. IV.

(*a*) Explain the form κἀγώ. (*b*) Give the principal parts of ἀκούω. (*c*) Account for the mood of δειπνήσωμεν. (*d*) Give the rule for the case of τούτων.

IV. Τὸν δ' ἠμείβετ' ἔπειτα βοῶπις πότνια Ἥρη·
"αἰνότατε Κρονίδη. ποῖον τὸν μῦθον ἔειπες.
καὶ λίην σε πάρος γ' οὔτ' εἴρομαι οὔτε μεταλλῶ,
ἀλλὰ μάλ' εὔκηλος τὰ φράζεαι ἅσσ' ἐθέλῃσθα.
νῦν δ' αἰνῶς δείδοικα κατὰ φρένα μή σε παρείπῃ
ἀργυρόπεζα Θέτις, θυγάτηρ ἁλίοιο γέροντος·
ἠερίη γὰρ σοί γε παρέζετο καὶ λάβε γούνων.
τῇ σ' ὀΐω κατανεῦσαι ἐτήτυμον ὡς Ἀχιλῆα
τιμήσῃς, ὀλέσῃς δὲ πολέας ἐπὶ νηυσὶν Ἀχαιῶν."
τὴν δ' ἀπαμειβόμενος προσέφη νεφεληγερέτα Ζεύς·
"δαιμονίη, αἰεὶ μὲν ὀΐεαι, οὐδέ σε λήθω,
πρῆξαι δ' ἔμπης οὔ τι δυνήσεαι, ἀλλ' ἀπὸ θυμοῦ
μᾶλλον ἐμοὶ ἔσεαι· τὴ δέ τοι καὶ ῥίγιον ἔσται.
εἰ δ' οὕτω τοῦτ' ἐστὶν, ἐμοὶ μέλλει φίλον εἶναι.

ἀλλ' ἀκέουσα κάθησο, ἐμῷ δ' ἐπιπειθεο μύθῳ,
μή νύ τοι οὐ χραίσμωσιν ὅσοι θεοί εἰσ' ἐν Ὀλύμπῳ
ἆσσον ἰόνθ,' ὅτε κέν τοι ἀάπτους χεῖρας ἐφείω."

HOMER, IL., Bk. I.

1. Write the Attic forms of ἔειπες, φράζεαι, πόλεας, ὀΐεαι.

2. From what present indicatives are δείδοικα, λάβε, τιμήσῃς, ὀλέσῃς, πρῆξαι, δυνήσεαι formed?

3. Explain the case of ἐμοί, μύθῳ, γούνων.

4. Account for the mood of ἐθέλῃσθο, παρείπῃ, τιμήσῃς.

5. Divide the first three lines into feet, marking the position of the principal caesura in each verse.

LATIN.

MONDAY, SEPT. 17TH:—AFTERNOON, 2 TO 5.

Examiner,... .....A. JUDSON EATON, PH.D.

(A) LATIN GRAMMAR.

1. Decline *opus, genu, pater.* Decline in the plural and give the gender of, *lis, litus, senex, vis.*

2. Give the Ablative (singular and plural) of *domus, filia, dies, mare, deus.* Decline in the singular *totus*, in the plural *idem.*

3. Compare *audax, facilis, malevolus, parvus, senex, digne, ferociter.*

4. Write down the Latin for "nineteen," "forty thousand," "thirtieth," and "six times."

5. Write down the first person singular of the tenses of the indicative and subjunctive of *ferre, posse, ire, prodesse, velle, audire.* Inflect *consequor* in the future indicative, and *nolo* in the imperative.

6. Write down the principal parts of *caedo, cado, iubeo, obliviscor, audeo fio.* What cases follow *utor, egeo, pareo, iuterest, persuadeo?*

7. Translate and explain the construction of *italicized words or phrases*:—

(*a*) Non est is qui *timeat*. (*b* Venerunt *ut pacem peterent*. (*c*) *Os humerosque* deo similis.

8. Translate into Latin:—(*a*) I am afraid my brother will not come. (*b*) Aquitania is very far off from Rome. (*c*) Peace and friendship were established with the neighboring states. (*d*) Caesar was not able to grant a passage through the province to anyone. (*e*) On the seventh day we arrived at Ocelum.

(B) CAESAR AND VIRGIL.

NOTE.—Candidates are required to take *one* passage from Caesar and *one* from Virgil.

I. Caesari renuntiatur Helvetiis esse in animo per agrum Sequanorum et Aeduorum iter in Santonum fines facere, qui non longe a Tolosatium finibus absunt, *quae civitas* est in provincia. Id si *fieret*, intelligebat magno cum periculo provinciae futurum ut homines bellicosos, populi Romani inimicos, locis patentibus maximeque frumentariis finitimos *haberet*. Ob eas causas ei *munitioni* quam facerat T. Labienum legatum praefecit; ipse in Italiam magnis itineribus contendit duasque ibi legiones conscribit, et tres quae circum Aquileiam hiemabant ex hibernis educit, et qua proximum iter in ulteriorem Galliam per Alpes erat cum his quinque legionibus ire contendit. Ibi Centrones et Graioceli et Caturiges *locis superioribus occupatis itinere* exercitum prohibere conantur. Compluribus his proeliis pulsis, ab Ocelo, quod est citerioris provinciae extremum, in fines Vocontiorum ulterioris provinciae die septimo pervenit, inde in Allobrogum fines, ab Allobrogibus in Segusianos exercitum ducit. Hi sunt extra provinciam trans Rhodanum primi.—CAESAR, B. G. I. 10.

(*a*) What is the subject of *futurum?* of haberet? (*b*) Explain the construction of italicized words in the above passage.

II. Ubi vero moveri et appropinquare moenibus viderunt, nova atque insitata specie commoti legatos ad Caesarem de pace miserunt, qui ad hunc modum locuti: Non existimare Romanos sine ope divina bellum gerere, qui tantae altitudinis machinationes tanta celeritate promovere et ex propinquitate pugnare possent, se suaque omnia eorum potestati permittere dixerunt. Unum petere ac deprecari: si forte pro sua clementia ac mansuetudine, quam ipsi ab aliis audirent, statuisset Aduatucos esse conservandos, ne se armis despoliaret. Sibi omnes fere finitimos esse inimicos ac suae virtuti invidere, a quibus se defendere traditis armis non possent. Sibi praestare, si in eum casum deducerentur, quamvis fortunam a populo Romano pati quam ab his per cruciatum interfici inter quos dominari consuessent.—CAESAR, BK. II. 31.

(*a*) Account for the subjunctives *possent, despoliaret.* (*b*) Write in direct narration the passage from *Unum petere* through *non possent.*

III. Dixit; et avertens rosea cervice refulsit,
ambrosiaeque comae divinum vertice odorem
spiravere: pedes vestis defluxit ad imos
et vera incessu patuit dea. Ille ubi matrem
agnovit, tali fugientem est voce secutus:
"Quid natum toties crudelis tu quoque falsis
ludis imaginibus? cur dextrae iungere dextram
non datur, ac veras audire et reddere voces?"
Talibus incusat, gressumque ad moenia tendit.
At Venus obscuro gradientes aëre sepsit,
et multo nebulae circum dea fudit amictu:
cernere ne quis eos, neu quis contingere posset,
molirive moram, aut veniendi poscere causas.
Ipsa Paphum sublimis abit, sedesque revisit
laeta suas, ubi templum illi, centumque Sabaeo
ture calent arae, sertisque recentibus halant.—VIRGIL, BK. I.

(*a*) *avertens,*—what is the force of the pres. part. here? (*b*) *ambrosiae*: derive, (*c*) talibus: supply the ellipsis. (*d*) Remark on the construction of *amictu.* (*e*) Where was Paphos? (*f*) Scan the first three lines.

IV. Vestibulum ante ipsum primoque in limine Pyrrhus
exsultat, telis et luce coruscus ahena:
qualis ubi in lucem coluber mala gramina pastus,
frigida sub terra tumidum quem bruma tegebat,
nunc positis novus exuviis nitidusque iuventa,
lubrica convolvit sublato peccore terga
arduus ad solem, et linguis micat ore trisulcis.
Una ingens Periphas et equorum agitator Achillis
armiger Automedon, una omnis Scyria pubes
succedunt tecto, et flammas ad culmina iactant.
Ipse inter primos correpta dura bipenni
limina perrumpit, postisque a cardine vellit
aeratos; iamque excisa trabe firma cavavit
robora, et ingentem lato dedit ore fenestram.
Adparet domus intus, et atria longa patescunt;
adparent Priami et veterum penetralia regum
armatosque vident stantes in limine primo.—VIRGIL, BK. II.

(*a*) Give the principal parts of *pastus, micat.* (*b*) Derive *bruma, armiger, exsultat.* (*c*) *positis exuviis; correpta bipenni*: explain the difference between the English and Latin idioms in these, and like expressions. (*d*) Scan the last three lines.

MATHEMATICS.

TUESDAY, SEPT. 18TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

Assistant Examiner,.....H. M. TORY, B.A.

1. The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

(*a*) Divide a circle into two segments, so that the angle in one of them may be three times that in the other.

2. Divide a straight line into two parts, so that the rectangle under the whole line and one of the parts shall be equal to the square on the other.

3. To describe a square that shall be equal to a given rectilineal figure.

4. Any two sides of a triangle are together greater than the third side.

(*a*) The difference between any two sides of a triangle is less than the third side.

5. Solve the following equations :—

(1) $\frac{x-1}{2} + \frac{2x-7}{3} = x - 2,$

(2) $ax + by = c,$
$a^2x + b^2y = c^2,$

(3) $\sqrt{x+10} + \sqrt{x+1} = 1,$

(4) $(x+2)^2 = 4(x-1)^2.$

6. Find the L.C.M. of $8x^2 + 27$ and $6x^2 - 5x - 6$.

7. Simplify $\dfrac{x + \frac{y-x}{1-xy}}{1 - \frac{x(y-x)}{1+xy}}$

8. Simplify $\sqrt{512} - \sqrt{50} - \sqrt{98}$, and $\dfrac{3+\sqrt{5}}{3-\sqrt{5}}$

9. What principal will, at 5 per cent. simple interest, amount to $1,280 in 5 years?

10. A mixture is made of 20 gallons of syrup worth 60 cents per gallon, 36 gallons worth 75 cents per gallon, and a certain quantity of water; a profit of 10 per cent. is made by selling the mixture at 65 cents per gallon; how much water was added?

11. Simplify $\dfrac{\frac{1}{2}+\frac{1}{3}+\frac{1}{4}}{\frac{1}{2\frac{1}{2}}+\frac{1}{3\frac{1}{4}}+\frac{1}{4\frac{1}{2}}}$

12. Extract the square root of .1 and also of .i.

ENGLISH HISTORY AND ESSAY.

WEDNESDAY, SEPT. 19TH: —MORNING, 10.30 TO 12.30.

Examiners,..... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

FIRST YEAR.

1. The Roman occupation of Britain:

(*a*) Briefly notice traces which still exist.

(*b*) When did the Romans leave Britain? why? Why had the Britons to seek another ally? What ally did they find, and what was the consequence?

2. At various times in the course of our history, the Church has opposed the Crown; omitting reference to Becket, give instances, and say as precisely as you can on what question the disagreement arose.

3. The Norman, Tudor and Stuart lines:

(*a*) Name the first and last sovereigns of each line.

(*b*) Mention a conspicuous person in the reign of the sovereign you have named, and say precisely why he is so.

4. Show fully the genealogical connection between (*a*) the Tudor and Stuart (*b*) the Stuart and Hanoverian lines.

5. (*a*) Without giving any details of the struggle between them, specify broad distinctions between the Puritans and Cavaliers.

(*b*) Show from history that the two parties existed in Scotland.

6. Without reference to the Spanish Armada, show that Elizabeth in the latter half of her reign was regarded by Europe as the champion of Protestantism.

7. (*a*) The Exclusion Bill: To whom did this refer, and why?

(*b*) On what ground did John Hampden refuse to pay ship-money?

(*c*) How does it come to pass that Scotland has a national church of her own?

(*d*) State precisely why the British colonies in America revolted, and when the outbreak began.

8. Take the following leaders of invasions and risings, namely, Henry Bolingbroke (Hereford), Wat Tyler, William of Orange, Sir Thos. Wyatt, and say:

(*a*) To whose reigns they belong.
(*b*) The pretext advanced by each.
(*c*) The result of the struggle.

9. Connect historically the following pairs of names:

Evesham and Simon de Montfort.
Orleans and Joan of Arc.
Barnet and the Earl of Warwick.
Preston Pans and the Young Pretender.
The South Sea Company and Robert Walpole.
England and the Revocation of the Edict of Nantes.
Cobden and the Corn Laws.
France and Scotland.
France and Ireland.

10. Assign events to the following dates: 1605, 1649, 1665, 1715, 1757, 1789, 1832, 1855.

SECOND YEAR.

(Answer questions 2 and 7 of the First Year set and also the following:)

11. Give a constitutional sketch of the reign of Charles II.

12. Give an outline of Indian affairs in the reign of George II.

13. Explain the terms folcland, scutage, attainder, non-juror, abhorrer.

ESSAY.

(Write the Essay in a separate book, and affix your name to it.)

FIRST YEAR.

Write an essay of at least two full pages on any one of the following subjects:—

(*a*) Ambition.

(*b*) A Military Hero.

(*c*) The Triumphs of Modern Science.

SECOND YEAR.

ENGLISH COMPOSITION AND ESSAY.

1. Explain with illustration:—the difference between metaphor and simile, circumlocution, precision in the use of words, allegory.

2. Give some of the leading distinctions between the language of prose and that of poetry.

3. Describe a familiar landscape.

4. Write an essay of at least two pages on any *one* of the following subjects:—

(*a*) Decision of Character.

(*b*) The Power of Wealth.

(*c*) Applications of Electricity in Modern Life.

FACULTIES OF ARTS AND APPLIED SCIENCE.

ENGLISH GRAMMAR.

WEDNESDAY, SEPT. 19TH :— 9 to 10.30 A.M.

Examiner, ... CHAS. E. MOYSE, B.A.

FIRST YEAR.

(Question 10 is obligatory.)

1. "He did it very cleverly." What does *very* modify? Define a phrase, and convert *cleverly* into one. To what part of speech does *cleverly* belong, and to which subdivision of that part of speech?

2. Give the principal parts of the following verbs: lie, lade, chide, freight, cleave, thrive, swing, swim.

3. Write four simple sentences in each of which *one* of the following kinds of verbs appears, and observe the order prescribed:

(*a*) A strong transitive verb.
(*b*) A weak transitive verb.
(*c*) A strong intransitive verb.
(*d*) A defective verb.

4. Write sentences showing the use of *that* and *it* in English, and parse the words in question in each case.

5. (*a*) Name the three kinds of clauses. Write sentences by way of illustration, specifying the clauses as you do so.

(*b*) Show that a clause may be used as subject.

6. "Give him the book." Is *him* in the dative or accusative case? Give a reason for your answer.

7. What modifications does the plural in "s" undergo, and when?

8. To what part of speech may "*half*" belong? Give examples.

9. Define and illustrate the following terms: inflection, indefinite pronoun, correlative, augmentative, accidence, syntax.

10. Analyse and parse:
I feel inclined to ask you whether he went or not.

SECOND YEAR.

(Candidates will answer questions 2, 4, 6, 7, 8, 9, 10 (obligatory) of the First Year paper, and also the following:)

11. Show that *children* is a double plural. How do you account for plurals like *feet* and *teeth*?

12. Show that vowel change in the stem of verbs has decayed, and that the same is true of verbal inflections.

13. Exemplify the use of *so* and *as* in English; of *further* and *farther*; of *my* and *mine*.

14. Write on the influence of the French language on the English.

DICTATION.

I was one summer's day loitering through the great saloons of the British Museum, with that listlessness with which one is apt to saunter about a museum in warm weather; sometimes lolling over the glass cases of minerals, sometimes studying the hieroglyphics on an Egyptian mummy, and sometimes trying, with nearly equal success, to comprehend the allegorical paintings on the lofty ceilings. Whilst I was gazing about in this idle way, my attention was attracted to a distant door, at the end of a suite of apartments. It was closed, but every now and then it would open, and some strange-favoured being, generally clothed in black, would steal forth, and

glide through the rooms, without noticing any of the surrounding objects. There was an air of mystery about this that piqued my languid curiosity, and I determined to attempt the passage of that strait, and to explore the unknown regions beyond. The door yielded to my hand, with that facility with which the portals of enchanted castles yield to the adventurous knight-errant.

SUPPLEMENTAL EXAMINATIONS.

FIRST YEAR.

ENGLISH LITERATURE.

WEDNESDAY, SEPT. 19th :—A.M.

1. Give the four great periods of English Literature and their leading subdivisions.

2. Give some account of Cynewulf.

3. Write on the Mystery Plays.

4. Sketch Chaucer's life, and mention his chief poems as you do so. Enter into detail concerning the Canterbury Tales.

5. State what you know concerning the Scotch Chaucerians.

6. Write on the Renaissance and Discovery, and their effect on Elizabethan literature.

7. Give some account of the Faerie Queene and the English Spenserians.

FIRST YEAR ARTS AND APPLIED SCIENCE.

SUPPLEMENTAL EXAMINATION.

MILTON AND COMUS.

WEDNESDAY, SEPT. 19th :—A.M.

1. Give the three divisions of Milton's life and an account of the first.

2. What is meant by saying that Milton is the last of the Elizabethans?

3. State the occasion on which *Comus* was performed, and where it was acted.

4. Point out the inner meaning of *Comus*, as you unfold its construction.

5. Give or indicate passages in *Comus* which you consider the best, and state your reasons for doing so.

6. Use *Comus* to show Milton's reading.

7. Give expressions which demand particular attention to language.

8. What general arguments for continence does Milton advance?

FRENCH.

THURSDAY, SEPTEMBER 20TH.

Examiners, ... { P. J. DAREY, M.A., LL.D., OFFICIER D'ACADÉMIE.
J. L. MORIN, M.A.

1. Translate:

Il y *avait* autrefois un pauvre esclave qui avait un maître à la fois riche et méchant. Ce pauvre esclave aimait la vérité, et nulle menace de son maître ne *pouvait* lui faire dire une chose qu'il ne croyait pas être la vérité. Pour cette raison son maître le *haissait* et le maltraitait, et se fâchait tellement qu'il le saisissait à la gorge et lui *lançait* tout ce qui lui venait sous la main.

Le pauvre esclave n'enviait pas la richesse de son maître, mais il ne pouvait *s'empêcher* de penser combien il *serait* satisfait s'il était seulement libre. Devant son maître il n'osait pas ouvrir la bouche ; mais lorsqu'il était seul il se *disait*: "Qui t'a fait pauvre esclave, et cet homme riche ton maître? Dieu nous a fait tous frères, et aucun homme ne devrait oser te faire esclave."

2. Conjugate the future, present indicative and subjunctive of the verbs in *Italics* in the above extract.

3. How is the article in French contrasted with the preposition *de* and *à*? Give examples for each case.

4. Write the singular of *beaux* and of *baux*.

5. State five rules for the formation of the feminine of adjectives; give five examples.

6. Put the following sentences and words in the plural:

La maison de mon frère et celle de mon sœur. Le cheval du fermier et celui du général. La fille a perdu son bijou et celui de son amie. Œil. Travail. Nez. Chapeau. Livre. Souris.

7. Translate :—

You have my book ; give it to me. Have you any money ? Lend it to us. Do you think it freezes ? It will be necessary for me to sell all my cows. I cannot give you any thing. Bring me your pens and take your sister's. My gloves are yellow, my brother's are white. He who dines with us is my cousin.

8. *For Exhibition of the 1st year :—*

Expliquez la règle sur la formation du pluriel dans les substantifs composés, et écrivez le pluriel des mots qui suivent : *un lieutenant-général, un aide-de-camp, le chef-d'œuvre, le réveil-matin, un chou-fleur.*

9. Indiquez la règle touchant l'accord des adjectifs modificatifs *demi, nu* et *feu*, et citez des exemples pour chacun.

Translate (at sight) :

10. Les habitants de Paris sont d'une curiosité qui va jusqu'à l'extravagance. Lorsque j'arrivai, je fus regardé comme si j'avais été envoyé du ciel : vieillards, hommes, femmes, enfants tous voulaient me voir. Si je sortais, tout le monde se mettait aux fenêtres ; si j'étais aux Tuilleries, je voyais aussitôt un cercle se former autour de moi ; les femmes mêmes m'entouraient comme un arc-en-ciel nuancé de mille couleurs. Si j'étais au spectacle, je trouvais d'abord cent lorgnettes dirigées vers ma figure ; enfin, jamais homme n'a été tant vu que moi.

Montesquieu, *Lettres persannees.*

CHEMISTRY.

(FOR STUDENTS ENTERING MEDICAL FACULTY.)

WEDNESDAY, SEPT. 19th :—AFTERNOON, 2 TO 5.

Examiner, ...B. J. HARRINGTON, B.A., Ph.D.

1. Distinguish between chemical and physical changes, giving several examples of each.

2. Define the terms combustion, kindling temperature, metathesis, water of crystallization.

3. Give a sketch of the apparatus that you would employ in preparing distilled water.

4. How may we determine the relative proportions by weight of oxygen and hydrogen in water ?

5. How is ammonia gas prepared? What are its properties?

6. Explain the relationship of acids, bases and salts, and distinguish between acid-forming and base-forming elements.

7. Write equations illustrating the changes that take place (*a*) when hydrochloric acid acts upon calcium carbonate, (*b*) when ammonium nitrate is heated, (*c*) when sulphuric acid acts upon common salt.

8. What do you understand by allotropism? Distinguish between the allotropic forms (*a*) of carbon, (*b*) of phosphorus.

9. Contrast briefly the properties of hydro-chloric, nitric and sulphuric acid.

SUPPLEMENTAL EXAMINATION.

FACULTY OF ARTS, INTERMEDIATE EXAMINATIONS.

ENGLISH HISTORY.

(Candidates will take the questions prescribed for the Second Year Entrance.)

ENGLISH AND CANADIAN HISTORY.

Candidates will answer questions 11, 12 and 13, and also the following:—

14. Give an account of Champlain.

15. Write on (1) La Salle and (*b*) the Ohio Valley Struggle.

16. Make notes on Intendant, Donaconna, the Hundred Associates.

FACULTY OF APPLIED SCIENCE.

FIRST AND SECOND YEARS.

ENGLISH COMPOSITION.

The First Year Candidates will write on the subject prescribed for the Essay of the Second Year paper in Arts; the Second Year Candidates will take the whole of the Second Year paper in Arts.

FIRST YEAR HIGHER ENTRANCE AND EXHIBITIONS

Translation from Greek Authors.

Monday, Sept. 17th :—Morning, 9 to 12.

Examiner,.....A. Judson Eaton, M.A., Ph.D.

Note. Candidates are required to do (B) I., or (B) IV. from the paper for First Year Entrance; and for I. of the following paper may substitute question III. (Iliad, Bk. VI.) from the paper for Second Year Entrance.

I. *(a)* "Φίλε κασίγνητε, θάνατόν νύ τοι ὄρκι' ἔταμνον,
Οἷον προστήσας πρὸ Ἀχαιῶν Τρωσὶ μάχεσθαι·
Ὥς σ' ἔβαλον Τρῶες, κατὰ δ' ὅρκια πιστὰ πάτησαν.
Οὐ μέν πως ἄλιον πελει ὅρκιον αἱμά τε ἀρνῶν
Σπονδαὶ τ' ἄκρητοι καὶ δεξιαὶ, ἧς ἐπέπιθμεν
Εἴ περ γάρ τε καὶ αὐτίκ' Ὀλύμπιος οὐκ ἐτελεσσεν,
Ἕκ τε καὶ ὀψὲ τελεῖ, σύν τε μεγαλῳ ἀπέτισαν,
Σὺν σφῇσιν κεφαλῇσι γυναιξί τε καὶ τεκέεσσιν.
Εὖ γὰρ ἐγὼ τόδε οἶδα κατὰ φρένα καὶ κατά θυμόν·
Ἔσσεται ἦμαρ ὅτ' ἄν ποτ' ολώλῃ Ἴλιος ἱρὴ
Καὶ Πρίαμος καὶ λαὸς ἐϋμμελίω Πριάμοιο,
Ζεὺς δέ σφι Κρονίδης ὑψίζυγος, αἰθέρι ναίων,
Αὐτός ἐπισσείῃσιν ἐρεμνὴν αἰγίδα πᾶσιν
Τῆσδ' ἀπάτης κοτέων· τὰ μὲν ἔσσεται οὐκ ἀτέλεστα.

(b) Τὸν δ' ἄρ' ὑπόδρα ἰδὼν προσέφη κρατερὸς Διομήδης·
"Τέττα, σιωπῇ ἧσο, ἐμῷ δ' ἐπιπείθεο μύθῳ.
Οὐ γὰρ ἐγὼ νεμεσῶ Ἀγαμέμνονι ποιμένι λαῶν,
Ὀτρύνοντι μάχεσθαι ἐϋκνήμιδας Ἀχαιούς·
Τούτῳ μὲν γὰρ κῦδος ἅμ' ἕψεται, εἴ κεν Ἀχαιοὶ
Τρῶας δῄώσωσιν ἕλωσί τε Ἴλιον ἱρὴν,
Τούτῳδ' αὖ μέγα πένθος Ἀχαιῶν δῃωθέντων.
Ἀλλ' ἄγε δὴ καὶ νῶι μεδωμεθα θούριδος ἀλκῆς.

Homer, Il. Bk. IV.

(*a*) Divide the first two lines of ext. (*a*) into feet, marking the place of the principal caesura in each verse. (*b*) Write the Attic forms of *τοι, ἐτελεσσε, κεφαλῇσι, τεκέεσι, ἕλωι, ῇς.* State accurately the principles of Syntax that explain the following forms: (*a*) in regard to *case, μυθῳ, ἀλκῆς, ῇς, αἴθερι*; (*b*) in regard to *mood, μάχεσθαι, μεδώμεθα, ὀλώλῃ*; (*c*) in regard to *number, ἔσσεται* (last time of extract (*a*).

II. Καίτοι τί δήποτε, ὦ ἄνδρες Ἀθηναῖοι, νομίζετε τὴν μὲν τῶν Παναθηναίων ἑορτὴν καὶ τὴν τῶν Διονυσίων ἀεὶ τοῦ καθήκοντος χρόνου γίγνεσθαι, ἄντε δεινοὶ λάχωσιν ἄν τε ἰδιῶται οἱ τούτων ἑκατέρων ἐπιμελούμενοι, εἰς ἃ τοσαῦτ' ἀναλίσκετε χρήματα ὅσα οὐδ' εἰς ἕνα τῶν ἀποστόλων, καὶ τοσοῦτον ὄχλον καὶ παρασκευὴν ὅσην οὐκ οἶδ' εἴ τι τῶν ἁπάντων ἔχει, τοὺς δ' ἀποστόλους πάντας ὑμῖν ὑστερίζειν τῶν καιρῶν, τὸν εἰς Μεθώνην, τὸν εἰς Παγασὰς, τὸν εἰς Ποτίδαιαν; ὅτι ἐκεῖνα μὲν ἅπαντα νόμῳ τέτακται, καὶ πρόοιδεν ἕκαστος ὑμῶν ἐκ πολλοῦ τίς χορηγὸς ἢ γυμνασίαρχος τῆς φυλῆς, πότε καὶ παρὰ τοῦ καὶ τίνα λαβόντα τί δεῖ ποιεῖν, οὐδὲν ἀνεξέταστον οὐδ' ἀόριστον ἐν τούτοις ἠμέληται, ἐν δὲ τοῖς περὶ τοῦ πολέμου καὶ τῇ τούτου παρασκευῇ ἄτακτα ἀδιόρθωτα ἀόριστα ἅπαντα.

τί ζητεῖτ'; ἔφην. ἐλευθερίαν. εἶτ' οὐχ ὁρᾶτε Φιλιππον ἀλλοτριωτάτας ταυτῃ καὶ τὰς προσηγορίας ἔχοντα; βασιλεὺς γὰρ καὶ τυραννος ἅπας ἐχθρὸς ἐλευθερίᾳ καὶ νόμοις ἐναντίος. οὐ φυλάξεσθ' ὅπως, ἔφην, μὴ πολέμου ζητοῦντες ἀπαλλαγῆναι δεσπότην εὕρητε;

Demosthenes, Phil. I. and II.

(*a*) Give the origin and brief description of the two festivals, Panathenaea and the Dionysia. (*b*)) Where are the three towns, mentioned in the first extract, situated, and

why is reference made to them here? (*c*) What address of his is Demosthenes here quoting? (*d*) State in brief the argument of the second Philippic.

III. Τὴν δ' ἀπαμειβόμενος προσέφη πολύμητις Ὀδυσσεύς.
ἀργαλέον, βασίλεια, διηνεκέως ἀγορεῦσαι
κήδε' ἐπεί μοι πολλὰ δόσαν θεοὶ Οὐρανίωνες·
τοῦτο δέ τοι ἐρέω, ὅ μ' ἀνείρεαι ἠδὲ μεταλλᾷς,
Ὠγυγίη τις νῆσος ἀπόπροθεν εἰν ἁλὶ κεῖται,
ἔνθα μὲν Ἄτλαντος θυγάτηρ, δολόεσσα Καλυψώ,
ναίει ἐϋπλόκαμος, δεινὴ θεός· οὐδέ τις αὐτῇ
μίσγεται, οὔτε θεῶν, οὔτε θνητῶν ἀνθρώπων.
ἀλλ' ἐμὲ τὸν δύστηνον ἐφέστιον ἤγαγε δαίμων
οἷον, ἐπεί μοι νῆα θοὴν ἀργῆτι κεραυνῷ
Ζεὺς ἔλσας ἐκέασσε μέσῳ ἐνὶ οἴνοπι πόντῳ.
ἔνθ' ἄλλοι μὲν πάντες ἀπέφθιθον ἐσθλοὶ ἑταῖροι·
αὐτὰρ ἐγὼ, τρόπιν ἀγκὰς ἑλὼν νεὸς ἀμφιελίσσης,
ἐννῆμαρ φερόμην· δεκάτῃ δέ με νυκτὶ μελαινῃ
νῆσον ἐς Ὠγυγίην πέλασαν θεοί, ἔνθα Καλυψὼ
ναίει ἐϋπλόκαμος, δεινὴ θεός· ἥ με λαβοῦσα,
ἐνδυκέως ἐφίλει τε καὶ ἔτρεφεν, ἠδὲ ἔφασκεν
θήσειν ἀθάνατον καὶ ἀγήραον ἤματα πάντα·
ἀλλ' ἐμὸν οὔποτε θυμὸν ἐνί στήθεσσιν ἔπειθεν.

Homer, Odys. VII.

IV. Ἔνθα δὲ πῦρ κείαντες ἐθύσαμεν· ἠδὲ καὶ αὐτοὶ
τυρῶν αἰνύμενοι φάγομεν· μένομέν τέ μιν ἔνδον
ἥμενοι, ἕως ἐπῆλθε νέμων· φέρε δ' ὄβριμον ἄχθος
ὕλης ἀζαλέης, ἵνα οἱ ποτιδόρπιον εἴη.
ἔκτοσθεν δ' ἄντροιο βαλὼν ὀρυμαγδὸν ἔθηκεν·
ἡμεῖς δὲ δείσαντες ἀπεσσύμεθ' ἐς μυχὸν ἄντρου.
αὐτὰρ ὅγ' εἰς εὐρὺ σπέος ἤλασε πίονα μῆλα,

πάντα μάλ', ὅσσ' ἤμελγε, τὰ δ' ἄρσενα λεῖπε θύρῃφιν,
ἀρνειούς τε τράγους τε, βαθείης ἔκτοθεν αὐλῆς.
αὐτὰρ ἔπειτ' ἐπέθηκε θυρεὸν μέγαν ὑψόσ' ἀείρας,
ὄβριμον· οὐκ ἂν τόνγε δύω καὶ εἴκοσ' ἄμαξαι
ἐσθλαὶ, τετράκυκλοι, ἀπ' οὔδεος ὀχλίσσειαν·
τόσσην ἠλίβατον πέτρην ἐπέθηκε θύρῃσιν.
ἑζόμενος δ' ἤμελγεν ὄϊς καὶ μηκάδας αἶγας,
πάντα κατὰ μοῖραν, καὶ ὑπ' ἔμβρυον ἦκεν ἑκάστῃ.
αὐτίκα δ' ἥμισυ μὲν θρέψας λευκοῖο γάλακτος,
πλεκτοῖς ἀν ταλάροισιν ἀμησάμενος κατέθηκεν·
ἥμισυ δ' αὖτ' ἔστησεν ἐν ἄγγεσιν, ὄφρα οἱ εἴη
πίνειν αἰνυμένῳ, καὶ οἱ ποτιδόρπιον εἴη.
αὐτὰρ ἐπειδὴ σπεῦσε πονησάμενος τὰ ἃ ἔργα,
καὶ τότε πῦρ ἀνέκαιε, καί εἴσιδεν, εἴρετο δ' ἡμέας·

Homer, Odys. IX.

FIRST YEAR EXHIBITIONS.

LATIN.

MONDAY, SEPT. 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....A. JUDSON EATON, PH.D.

NOTE.—Passages I *and* II from the paper for First Year Entrance may be substituted for III., and either III. or IV. from the same paper for II.

I.

(*a*) Haec si tecum, ut dixi, patria *loquatur*, nonne impetrare *debeat* etiam si vim adhibere non possit? Quid, quod tu te ipse in custodiam dedisti? quod vitandae suspitionis causa, ad M'. Lepidum te habitare velle dixisti? a quo non receptus etiam ad me venire ausus es, atque ut dom meae te adservarem rogasti. Cum a me quoque id responsum tulisses, me nullo modo posse isdem *parietibus* tuto esse tecum, qui magno in periculo essem quod isdem *moenibus* contineremur, ad Q. Metellum praetorem venisti: a quo repudiatus ad sodalem tuum, virum optimum, M. Marcellum demigrasti: quem tu videlicet et ad custodiendum diligentissimum et ad suspicandum sagacissimum et vindicandum fortissimum fore putastii Sed quam longe videtur a carcere atque a vinculis abesse debere, qui se ipse iam dignum custodia iudicarit?—CICERO, CATIL. I. 19.

(*b*) Est mihi *tanti*, Quirites, huius invidiae falsae atque iniquae tempestatem subire, dum modo a vobis huius horribilis belli ac nefarii periculum *depellatur*. Dicatur sane eiectus esse a me, dum modo eat in exsilium Sed, mihi credite, non est iturus. Numquam ego a dis immortalibus optabo, Quirites, invidiae meae levandae causa, ut L. Catilinam ducere exercitum hostium atque in armis volitare audiatis: sed triduo tamen audietis; multoque magis illlud timeo, ne mihi sit invidiosum aliquando, quod illum emiserim potius quam quod *eiecerim*.—Cic., Catil. II. 15.

(*a*) Account for the case of *moenibus, parietibus, tanti;* the mood of *loquatur—debeat, essem, depellatur, emiserim.* (*β*) Give the date of Catiline's conspiracy and the consuls of that year. (*γ*) Where was Praeneste and why would Catiline be likely to seize it? What is its modern name?

II

Nec minus Andromache, digressu maesta supremo,
Fert picturatas auri subtemine vestes
Et Phrygiam Ascanio chlamydem, nec cedit honore,
Textilibusque onerat donis ac talia fatur:

Accipe et haec, manuum tibi quae monumenta mearum
Sint, puer, et longum Andromachae testentur amorem,
Coniugis Hectoreae. Cape dona extrema tuorum,
O mihi sola mei super Astyanactis imago.
Sic oculos, sic ille manus, sic ora ferebat;
Et nunc aequali tecum pubesceret aevo.
Hos ego digrediens lacrimis adfabar obortis:
Vivite felices, quibus est fortuna peracta
Iam sua; nos alia ex aliis in fata vocamur.—Virgil, Bk. III.

At regina, pyra penetrali in sed sub auras
Erecta ingenti taedis atque ilice secta,
Intenditque locum sertis, et fronde coronat
Funerea; super exuvias ensemque relictum
Effigiemque toro locat, haud ignara futuri.
Stant arae circum, et crinis effusa sacerdos
Ter centum tonat ore deos, Erebumque, Chaosque,
Tergeminamque Hecaten, tria virginis ora Dianae.
Sparserat et latices simulatos fontis Averni;
Falcibus et messae ad lunam quaeruntur ahenis
Pubentes herbae, nigri cum lacte veneni;
Quaeritur et nascentis equi de fronte revulsus
Et matri praereptus amor.—Virgil, Bk. IV.

(*a*) Describe the *chlamys*. (*b*) *honore, donis, aevo, taedis:* classify these ablatives. (*c*) *tergeminam:* explain the meaning of this epithet.

(*d*) What is the construction of *deos?* of *ora?* (*e*) Scan, and remark on any peculiarities, the following lines :

(1) Liminaque laurusque dei totusque moveri.

(2) Quid struit ? aut qua spe, inimica in gente, moratur.

III.

Erant eiusmodi fere situs oppidorum ut posita in extremis lingulis promontoriisque neque pedibus aditum haberent, cum ex alto se aestus incita visset, quod his accidit semper horarum XII spatio, neque navibus, quod rursus minuente aestu naves in vadis afflictarentur. Ita utraque re oppidorum oppugnatio impediebatur; ac si quando magnitudine operis forte superati, extruso mari aggere ac molibus, atque his oppidi moenibus adaequatis, suis fortunis desperare coeperant, magno numero navium appulso, cuius rei summam facultatem habebant, sua deportabant omnia seque in proxima oppida recipiebant : ibi se rursus iisdem opportunitatibus loci defendebant. Haec eo facilius magnam partem aestatis faciebant, quod nostrae naves tempestatibus detinebantur, summaque erat vasto atque aperto mari, magnis aestibus, raris ac prope nullis portibus, difficultas navigandi.—Caesar, B. G. III. 12.

Acie triplici institua et celeriter octo milium itinere confecto, prius ad hostium castra pervenit quam quid ageretur Germani sentire possent. Qui omnibus rebus subito perterriti et celeritate adventus nostri et discessu suorum, neque consilii habendi neque arma capiendi spatio dato, perturbantur copiasne adversus hostem ducere, an castra defendere, an fuga salutem petere praestaret. Quorum timor cum fremitu et concursu significaretur, milites nostri pristini diei perfidia incitati in castra irruperunt. Quo loco qui celeriter arma capere potuerunt paulisper nostris restiterunt atque inter carros impedimentaque proelium commiserunt; at reliqua multitudo puerorum mulierumque, nam cum omnibus suis domo excesserant Rhenumque transierant, passim fugere coepit ; ad quos consectandos Caesar equitatum misit.—Caesar, B. G. IV. 14.

(*a*) Explain and classify the various ablatives in the passage from the third book. (*b*) Remark on the syntax of *possent, domo, ad quos consectandos, consilii habendi, arma capiendi, ne—an—an.*

IV. [*Translation at Sight*].

Aristides

Aristides, Lysimachi filius, Atheniensis, aequalis, fere fuit Themistocli. Itaque cum eo de principatu contendit : namque obtrectarunt inter se. In his autem cognitum est, quanto antestaret eloquentia innocentiae Quamquam enim adeo excellebat Aristides abstinentia, ut unus post hominum memoriam, quem quidem nos audierimus, cognomine Iustus sit appellatus, tamen, a Themistocle collabefactus, testula illa exilio decem

annorum multatus est. Qui quidem cum intelligeret, reprimi concitatam multitudinem non posse, cedens que animadvertisset quendam scribentem ut patria pelleretur, quaesisse ab eo dicitur, quare id faceret, aut quid Aristides commisisset, cur tanta poena dignus duceretur. Cui ille respondit se ignorare Aristiden, sed sibi non placere, quod tam cupide elaborasset, ut praeter ceteros Iustus appellaretur. Hic decem annorum legitimam poenam non pertulit. Nam postquam Xerxes in Graeciam descendit sexto fere anno quam erat expulsus, populi scito in patriam restitutus est.

Interfuit autem pugnae navali apud Salamina, quae facta est prius quam poena liberaretur? Idem praetor fuit Atheniensium aqud Plataeas in proelio, quo Mardonius fusus barbarorumque exercitus interfectus est. Neque aliud est ullum huius in re militari illustre factum, quam huius imperi; memoria, iustitiae vero et aequitatis et innocentiae multa, in primis quod eius aequitate factum est, cum in communi classe esse Graeciae simul cum Pausania, quo duce Mardonius erat fugatus, ut summa imperii maritimi ab Lacedaemoniis transferretur ad Athenienses. Namque ante id tempus et mari et terra duces erant Lacedaemonii.

FIRST YEAR EXEIBITIONS.

GRAMMAR AND COMPOSITION.

THURSDAY, SEPT. 20 :—AFTERNOON, 2 TO 5.

Examiner,.....A. JUDSON EATON, PH.D.

1. Decline (accenting) *ναῦς, πλείων, ὅστις*. Inflect *λύω* in pres. subjunct. pass., *στέλλω* in 1 aor. opt. pass., *δίδωμι* in 2 aor. indic. act.

2. What changes would the laws of euphony require in the following combinations: *νυκτ-ς, ἐν-πιπτω, φυλακ-ι-ω, ἀπ-ἰημι. γραφ-σω.*

3. Give the principal parts of posco, necto, metior, audeo, sterno, reor, sino, cado, caedo.

4. Explain and give an example of each in Latin: subjective genitive, ethic dative, accusative of respect.

5. (*a*) Explain the use of the dative case after "nubere." (*b*) How is "nor" to be translated, in Latin, with the imperative?

6. *Patiens laboris—patiens laborem.* Translate and explain the difference between these expressions.

7. "P. Cornelius Scipio Africanus Aemilianus." Define fully each of these names.

8. What is known as the "Historic present"?

9. Explain the expressions *Zeugma, constructio ad synesim, tmesis, ἄρσις, θέσις, a spondaic verse.*

10. Explain and illustrate the three uses of the participles in Greek.

11. Translate into Greek: (1) I have often admired the virtue of Socrates. (2) He was vexed that the citizens were rich. (3) He had a pain in both his knees. (4) The Persian was found guilty of murder. (5) He said that all the citizens ought to confer benefits on their country, when there is any occasion.

12. Translate into Latin *any five* of the following sentences:

(1) I am afraid my brother will not come. (2) He sent ambassadors to beg for peace. (3) All their towns, in number about twelve, together with the isolated dwellings, were burned. (4) No one can be found so desperate as not to admit that Catiline is a bad man. (5) The host of the enemy was so great, and their reputation so pre-eminent, that Caesar refrained from a general engagement; still he decided to try skirmishes daily. (6) And, therefore, my countrymen, do not believe that I, who have so often led you to the field of battle, am afraid to-day of fortune abandoning me.

13. Translate into Latin: Caesar learns from the envoys who came to him what the military power of each state is, from whom the Belgae have sprung, and on what account they were led over the Rhine into Gaul. He found out that the Bellovaci had promised, in the common assembly of the Belgae, a hundred thousand men, and had demanded the direction of the war as their right. The envoys of the Remi said that the Belgae were the only ones who had kept the Teutoni and Cimbri from overrunning their lands; "from which events," said they, "it has resulted that they have assumed great authority in every military affair."

FIRST YEAR EXHIBITIONS.

ALGEBRA—ARITHMETIC.

TUESDAY, SEPTEMBER 18TH:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL.D.

Assistant Examiner,.....H. M. TORY, B.A.

1. Solve the following equations:

(1) $\frac{3x+1}{4} - 2(6-x) = \frac{5x-4}{7} - \frac{x-2}{3}$;

(2) $3y + \frac{9}{x} + 6 = 0 \quad y + \frac{5}{x} = 8$;

(3) $\sqrt{x} - \sqrt{4-x} = \sqrt{4-3x}$;

(4) $x^2 + xy = 24,\ 2y^2 + 3xy = 32.$

2. Find two fractions whose sum is $\frac{3}{8}$, and whose difference is equal to their product.

3. Divide $x + 243y^{\frac{5}{3}}$ by $x^{\frac{1}{3}} + 3y^{\frac{1}{3}}$, and find the value of

$$\sqrt{50} \times \sqrt[3]{25} \times \sqrt[4]{100}.$$

4. Having given the first term, and common ratio of the successive terms of a geometrical progression; find the n^{th} term and the sum of n terms. Find the 5^{th} term and the sum of 5 terms of the series 3 5, $8\frac{1}{3}$, &c.

5. If $a\ b\ c$ be in geometrical progression and x, y be the arithmetic means between a, b and b, c respectively, prove that $\frac{a}{x} + \frac{c}{y} = 2$.

6. Insert 4 harmonic means between $\frac{2}{3}$ and $\frac{2}{7}$.

7. The arithmetic mean of two numbers is 17, and the geometric mean is 15; what are the numbers?

8. Simplify $$\frac{\frac{a-b}{1+ab} + \frac{b-c}{1+bc}}{1 - \frac{(a-b)(b-c)}{(1+ab)(1+bc)}},$$

and show that $\frac{b-c}{a} + \frac{c-a}{b} + \frac{a-b}{c} + \frac{(b-c)(c-a)(a-b)}{abc} = 0.$

9. Extract the square root 28.83695.

10. Find a fourth proportional to 3.81, 085, and .0023.

11. Find the number of cubic inches in a gallon of water (*i.e.*, 10 lbs. avoirdupois), one cubic inch weighing 252.5 grains.

12. The true length of a year is 365.24222 days; if every fourth year was taken as leap year, in what time would the error in reckoning amount to one day?

FIRST YEAR EXHIBITIONS.

GEOMETRY.

TUESDAY, JUNE 18TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.
Assistant Examiner,.....H. M. TORY, B.A.

1. If a side of a triangle be produced, the exterior angle is equal to the sum of the two interior opposite angles, and the sum of the three interior angles is equal to two right angles.

(*a*) Shew how a right angle may be divided into three equal parts.

2. In every triangle the square on the side subtending an acute angle is less than the square on the sides containing that angle by twice the rectangle contained by either of those sides, and the straight line intercepted between the perpendicular let fall on it from the opposite angle and the acute angle.

(*a*) The sum of the squares on the sides of a parallelogram is equal to the sum of the squares on the diagonals.

3. If a straight line touch a circle, and from the point of contact a straight line be drawn cutting the circle, the angles which this line makes with the line touching the circle shall be equal to the angles which are in the alternate segments of the circle.

4. In equal circles, equal angles stand on equal arcs, whether they be at the centres or circumference.

5. Draw perpendicular to a given straight line a straight line to touch a given circle.

*6. To inscribe an equilateral and equiangular hexagon in a given circle.

*7. On a given straight line to describe a rectilineal figure similar and similarly situated to a given rectilineal figure.

*8. The rectangle contained by the diagonals of a quadrilateral figure inscribed in a circle is equal to both the rectangles contained by its opposite sides.

---

*Extra questions.

FIRST YEAR EXHIBITIONS, 1894.

ENGLISH LITERATURE AND COMPOSITION.

SHAKESPEARE,—MACBETH.

WEDNESDAY, SEPT. 19TH :—AFTERNOON, 2 TO 5.

Examiner,..... ....CHAS. E. MOYSE, B.A.

1. Compare Macbeth with Lady Macbeth, and quote as you do so.

2. What do you understand to be the meaning of the Three Witches?

3. Give a list of the characters who bear individual names, and state the exact fate of those who die violent deaths.

4. Give the meaning (and nothing else) of the following words: paddock, peak, coign, ravelled, brinded, yesty, mortal, protest, fell (noun), harness. Refer as many as you can to their places in the play.

5. Give an outline of Act V.

6. What is noticeable in Shakespeare's prosody? Illustrate from the play.

7. Notice allusions derived from (*a*) Scripture, (*b*) Classical History and Literature.

ESSAY.

Write an Essay of not less than one page on *one* of the following subjects: Painting, Latin, a Cathedral.

FIRST YEAR GERMAN (DONALDA)

MONDAY, SEPT. 17TH :—MORNING, 9 TO 12.

Examiner,.....L. R. GREGOR, B.A.

No. 1. Translate into English.

(*a*) Die eherne Bildsäule eines vortrefflichen Künstlers schmolz durch die Hitze einer wütenden Feuersbrunst in einen Klumpen. Dieser Klumpen kam einem andern Künstler in die Hände, und durch seine Geschicklichkeit verfertigte er eine neue Bildsäule daraus; von der erstern in dem, was sie vorstellte, unterschieden, an Geschmack und Schönheit aber ihr gleich.

(*b*) Wie heißt das Ding, das Wen'ge schätzen?
Doch ziert's des größten Kaisers Hand;
Es ist gemacht, um zu verletzen;
Am nächsten ist's dem Schwert verwandt

Kein Blut vergießt's und macht doch tausend Wunden
Niemand beraubt's und macht doch reich;
Es hat den Erdkreis überwunden,
Es macht das Leben sanft und gleich.

(*c*) Des Wassers und des Feuers Kraft
Verbündet sieht man hier:
Das Mühlrad, von der Flut gerafft,
Umwälzt sich für und für;
Die Werke klappern Nacht und Tag;
Im Takte pocht der Hämmer Schlag,
Und bildsam von den mächt'gen Streichen
Muß selbst das Eisen sich erweichen.

(*d*) Einen Blick
Nach dem Grabe
Seiner Habe
Sendet noch der Mensch zurück—
Greift fröhlich dann zum Wanderstabe.
Was Feuers Wut ihm auch geraubt,
Ein süßer Trost ist ihm geblieben:
Er zählt die Häupter seiner Lieben,
Und sieh, ihm fehlt kein teures Haupt.

No. 2. Parse carefully the words indicated in above extracts.

No. 3. Translate into German :—

(*a*) In summer I am very fond of the country, but in winter I prefer the city. (*b*) The Count's carriage will be sold to-morrow, his horses were sold this morning. (*c*) As a child I was punished very severely by my father, if I told an untruth. (*d*) Are you not ashamed of your conduct? (*e*) I wrote to my cousin some weeks ago; I am waiting patiently for an answer.

(*f*) This morning I read the first act of A (Mid) Summer Night's Dream before getting up. Who brought you your breakfast? Nobody. I got up at the usual time.

No. 4. What cases do the following prepositions severally govern? gemäß, bei, an, in, durch, gegenüber.

No. 5. Conjugate the Pluperfect Indicative active of any reflexive verb.

No. 6. Turn the following sentences into the passive voice, (*a*) Ich habe ihm geholfen. (*b*) Man erlaubt Ihnen zu tanzen. (*c*) Er hat mir Hülfe verſprochen.

No. 7. Write a German composition of not less than one hundred and fifty words on any one of the following subjects. Student Life, The Provincial Exhibition, Milton, Longfellow.

SECOND YEAR ENTRANCE AND FIRST YEAR SUPPLEMENTAL GREEK.

MONDAY, SEPT. 17TH:—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, PH.D.

Assistant Examiner,.....JOHN L. DAY, B.A.

NOTE.—Candidates have the option of *any two* of the following sections I.–IV.

I. Οἱ δὲ Ἀθηναῖοι ἀνταναγόμενοι ἐναυμάχησαν περὶ Ἄβυδον κατὰ τὴν ἠόνα μέχρι δειλης ἐξ ἐωθινοῦ. Καὶ τὰ μὲν νικώντων, τὰ δὲ νικωμένων, Ἀλκιβιάδης ἐπεισπλεῖ δυοῖν δεούσαις εἴκοσι ναυσίν· ἐντεῦθεν δὲ φυγὴ τῶν Πελοποννησιων ἐγένετο πρὸς τὴν Ἄβυδον· καὶ ὁ Φαρνάβαζος παρεβοήθει, καὶ ἐπεισβαίνων τῷ ἵππῳ εἰς τὴν θάλατταν,

μέχρι δυνατὸν ἦν ἐμάχετο, καὶ τοὺς ἄλλοις τοῖς αὐτοῦ ἱππεῦσι καὶ πεζοῖς παρεκελεύετο. Συμφράξαντες δὲ τὰς ναῦς οἱ Πελοποννήσιοι καὶ παραταξαμένοι πρὸς τῇ γῇ ἐμάχοντο. Ἀθηναῖοι δὲ ἀπέπλευσαν, τριάκοντα ναῦς τῶν πολεμίων λαβόντες κενὰς καὶ ἃς αὐτοὶ ἀπώλεσαν κομισάμενοι, εἰς Σηστόν.

Τοῖς δὲ Συρακοσίοις καὶ Σελινοσίοις κρατίστοις γενομένοις ἀριστεῖα ἔδωκαν καὶ κοινῇ καὶ ἰδίᾳ πολλοῖς, καὶ οἰκεῖν ἀτέλειαν ἔδοσαν τῷ βουλομένῳ ἀει. Σελινουσίοις δέ, ἐπεὶ ἡ πόλις ἀπωλώλει, καὶ πολιτείαν ἔδοσαν. οἱ δ' Ἀθηναῖοι τοὺς νεκροὺς ὑποσπόνδους ἀπολαβόντες ἀπέπλευσαν εἰς Νότιον κακεῖ θάψαντες αὐτοὺς ἔπλεον ἐπὶ Λέσβου καὶ Ἑλλησπόντου. ὁρμοῦντες δὲ ἐν Μηθύμνῃ τῆς Λέσβου εἶδον παραπλεούσας ἐξ Ἐφέσου τὰς Συρακοσίας ναῦς πέντε καὶ εἴκοσι· καὶ ἔπ' αὐτὰς ἀναχθέντες τέτταρας μὲν ἔλαβον αὐτοῖς ἀνδράσι, τὰς δ' ἄλλας κατεδίωξαν εἰς Ἔφεσον. καὶ τοὺς μὲν ἄλλους αἰχμαλώτους Θράσυλλος εἰς Ἀθήνας ἀπέπεμψε πάντας. XEN., Hellen. I.

(*a*) Explain (1) the use of τὰ μὲν—τὰ δὲ. (2) the construction of δυοῖν δεούσαις εἴκοσι ναυσίν. (3) the case of τῷ ἵππῳ, (*b*) ἀριστεῖα — supply the ellipsis. (*c*) ἀπωλώλει—give mood and tense, and name the *transitive* and *intransitive* tenses of this verb. (*d*) ἔλαβον αὐτοῖς ἀνδράσι—explain this use of the Dative and express the phrase in Latin. (4) ἀπέλυσεν—note the quantity of the penultimate.

II. Αὐτὰρ Πηλείωνα προσηύδα Φοῖβος Ἀπόλλων·
"Τίπτε με, Πηλέος υἱὲ, ποσὶν ταχέεσσι διώκεις,
Αὐτὸς θνητὸς ἐὼν ἄμβροτον; οὐδέ νύ πώ με
Ἔγνων ὡς θεός εἰμι, σὺ δ' ἀσπερχὲς μενεαίνεις.
Ἦ νύ τοι οὔ τι μελει Τρώων πόνος ἐφόβησας,

Οἳ δή τοι εἰς ἄστυ ἄλεν, σὺ δὲ δεῦρο λιάσθης.
Οὐ μέν με κτενέεις, ἐπεὶ οὔ τοι μόρσιμός εἰμι.”
Τὸν δὲ μέγ' ὀχθήσας προσέφη πόδας ὠκὺς Ἀχιλ-
[λεύς.
“Ἔβλαψάς μ', Ἑκάεργε, θεῶν ὀλοώτατε πάντων,
Ἐνθάδε νῦν τρέψας ἀπὸ τείχεος· ἦ κ' ἔτι πολλοὶ
Γαῖαν ὀδὰξ εἷλον πρὶν Ἴλιον εἰσαφικέσθαι.
Νῦν δ' ἐμὲ μὲν μέγα κῦδος ἀφείλεο, τοὺς δ' ἐσάωσας
Ῥηϊδίως, ἐπεὶ οὔ τι τίσιν γ' ἔδδεισας ὀπίσσω.
Ἦ σ' ἂν τισαίμην, εἶ μοι δύναμίς γε παρείη.”

HOMER, Iliad, Bk. XXII.

(*a*) Give the Attic form for **ταχέεσι, ἄλεν, ἀφείλεο, κτενέεις.** (*b*) Explain the construction of **τοι** in the fifth line. (*c*) Scan line **γαῖαν 'οδαξ .....**, point out and explain any peculiarity of metre. (*d*) Give the rule for the double accusative **ἐμὲ.....κῦδος** (*ἀφείλεο*). (*e*) Account for the spelling of **ἔδδεισας**.

III. Ἀνδρομάχη δέ οἱ ἄγχι παρίστατο δακρυχέουσα,
ἔν τ' ἄρα οἱ φῦ χερὶ ἔπος τ' ἔφατ' ἔκ τ' ὀνόμαζεν
“Δαιμόνιε, φθίσει σε τὸ σὸν μένος οὐδ' ἐλεαίρεις
παῖδά τε νηπίαχον καὶ ἔμ' ἄμμορον, ἥ τάχα χήρη
σεῦ ἔσομαι. τάχα γάρ σε κατακτανέουσιν Ἀχαιοί,
πάντες ἐθορμηθέντες· ἐμοὶ δέ κε κέρδιον εἴη
σεῦ ἀφαμαρτούσῃ χθόνα δύμεναι. οὐ γὰρ ἔτ' ἄλλη
ἔσται θαλπωρή, ἐπεὶ ἄν σύγε πότμον ἐπίσπῃς,
ἀλλ' ἄχε'· οὐδέ μοί ἐστι πατὴρ καὶ πότνια μήτηρ.
ἤτοι γὰρ πατέρ' ἀμὸν ἀπέκτανε δῖος Ἀχιλλεύς,
ἔκ δὲ πόλιν πέρσεν Κιλίκων εὐναιετόωσαν,
Θήβην ὑψίπυλον. κατὰ θ' ἔκτανεν Ἠετίωνα,
οὐδέ μιν ἐξενάριξε, σεβάσσατο γὰρ τόγε θυμῷ,

ἀλλ' ἄρα μιν κατέκηε σὺν ἕντεσι δαιδαλέοισιν
ἠδ' ἐπὶ σῆμ' ἔχεεν. περὶ δὲ πτελέας ἐφύτευσαν
νύμφαι ὀρεστιάδες, κοῦραι Διὸς αἰγιόχοιο.
οἳ δέ μοι ἑπτὰ κασίγνητοι ἔσαν ἐν μεγάροισιν,
οἱ μὲν πάντες ἰῷ κίον ἤματι Ἄϊδος εἴσω·
πάντας γὰρ κατέπεφνε ποδάρκης δῖος Ἀχιλλεύς,
βουσὶν ἐπ' εἰλιπόδεσσι καὶ ἀργεννῇς ὀΐεσσιν.

ILIAD, VI, 405-424.

(*a*) Account for the case of οἳ (vv. 405 and 406), χειρὶ, σεῦ, χθόνα, Ἄϊδος.

(*b*) Give mood, tense, verbal-stem and principal parts of the verbs ἔσομαι, ἀπέκτανε, κατέκηε, ἔχεεν, ἆλτο, πῆξε.

(*c*) Scan, marking the position of the Caesura, lines 405, 408, and 412.

(*d*) Note the leading peculiarities of Homeric dialect and style.

SECOND YEAR ENTRANCE AND FIRST YEAR SUPPLEMENTAL LATIN.

MONDAY, SEPT. 17TH:—AFTERNOON, 2 TO 5.

Examiner, ... A. JUDSON EATON, PH.D.

NOTE.—Candidates are requested to translate *any two* of the following passages, and answer the questions appended.

I. Tales igitur inter viros amicitia tantas opportunitates habet, quantas vix queo dicere. Principio, qui potest esse vita vitalis, ut ait Ennius, quae non in amici mutua benevolentia conquiescat? Quid dulcius, quam habere quicum omnia audias sic loqui, ut tecum? Quis esset tantus fructus in prosperis rebus, nisi haberes, qui illis aeque, ac tu ipse, gauderet Adversas vero ferre difficile esset sine eo, qui illas gravius etiam, quam tu, ferret. Denique ceterae res, quae expetuntur opportunae sunt singulae

rebus fere singulis: divitiae, ut utare, opes, ut colare, honores, ut laudere, voluptates, ut gaudeas, valetudo, ut dolore careas et muneribus fungare corporis: amicitia res plurimas continet. Quoquo te verteris, praesto est; nullo loco excluditur; numquam intempestiva, numquam molesta est.—CICERO, *De Amicitia*.

(*a*) Explain the meaning, and, give the derivation of, *hemicyclium*, *prudentia*, *discidium*, *fastidium*, *obsequium*, *blanditia*, *assentatio*, *ecflorescit*, *recordatio*.

(*b*) Explain grammatically: (1) viginti annis ante; (2) satis superque esse sibi suarum cuique rerum; (3) benevolentia, qui est amicitiae fons a natura constitutus; (4) nemo est quin equo, quo consuevit, libentius utatur, quam intractato.

II. Illa solo fixos oculos aversa tenebat;
Nec magis incepto *vultum* sermone movetur,
Quam si dura silex aut stet Marpesia cautes.
Tandem corripuit sese, atque inimica refugit
In nemus umbriferum; coniux ubi pristinus *illi*
Respondet *curis*, aequatque Sychaeus amorem.
Nec minus Aeneas, casu percussus iniquo,
Prosequitur lacrimans longe, et miseratur euntem.
Interea videt Aeneas in valle reducta
Seclusum nemus, et virgulta sonantia silvis,
Lethaeumque, domos placidas qui praenatat, amnem.
Hunc circum innumerae gentes populique volabant:
Ac velut in pratis ubi apes aestate serena
Floribus insidunt variis, et candida circum
Lilia funduntur; strepit omnis murmure campus.
Horrescit *visu* subito, causasque requirit
Inscius Aeneas, quae *sint* ea flumina porro,
Quive viri tanto complerint agmine ripas.

VIRGIL, Bk. VI.

(*a*) Explain grammatical construction of *italicized* words. (*b*) Scan line commencing with *Interea*, and the following two lines, marking the position of the caesura. (*c*) Translate and comment on: (1) hac Troiana tenus fuerit fortuna secuta; (2) consulis imperium hic primus saevasque secures Accipiet; (3) tu quoque magnam partem opere in tanto, sineret dolor, Icare, haberes. (*d*) Write a short life of Virgil.

III. Est etiam nobis is animus, Quirites, ut non modo nullius audaciae cedamus, sed etiam omnis improbos ultro semper lacessamus. Quod si omnis impetus domesticorum hostium, depulsus a vobis, se in me unum

convertit, vobis erit videndum, Quirites, qua condicione posthac eos esse velitis, qui se pro salute vestra obtulerint invidiae periculisque omnibus: mihi quidem ipsi, quid est quod iam ad vitae fructum possit adquiri, cum praesertim neque in honore vestro, neque in gloria virtutis, quicquam vi deam altius, quo mihi libeat ascendere?—Cic. in Catil. III. 12.

Quam ob rem, sive hoc statueritis, dederitis mihi comitem ad contionem populo carum atque iucundum: sive Silani sententiam sequi malueritis, facile me atque vos crudelitatis vituperatione exsolveritis, atque obtinebo eam multo teniorem fuisse. Quamquam, patres conscripti, quae potest esse in tanti sceleris immanitate punienda crudelitas? Ego enim de meo sensu iudico. Nam ita mihi *salva* re publica vobiscum perfrui liceat, ut ego, quod in hac causa vehementior sum, non atrocitate animi moveor—quis est enim me mitior?—sed singulari quadam humanitate et misericordia. Videor enim mihi videre hanc urbem, lucem orbis terrarum atque arcem omnium gentium, subito uno incendio *concidentem*. Cerno animo sepulta in patria miseros atque in sepultos acervos civium. Versatur mihi ante oculos aspectus Cethegi, et furor in vestra caede bacchantis.—In Catilinam, IV., 11.

(*a*) Comment on the meaning of the following words: *Iovi Statori; consul designatus; tribunus aerarius; Quirites; fasces; sacrarium.* (*b*) Write briefly on the occasion of the delivery of each of the orations against Catiline.

Notice.—A paper on History, Grammar and Composition will be given on the afternoon of Thursday, Sept. 20th.

SECOND YEAR ENTRANCE AND FIRST YEAR SUPPLEMENTAL.

HISTORY, GRAMMAR AND COMPOSITION.

Thursday, Sept. 20th:—Afternoon, 2 to 5 p.m.

Examiner, ... A. Judson Eaton, Ph.D.

Note:—Candidates for Second Year Entrance are requested to answer questions 1, 4, 10 of the paper for First Year Exhibitions, 6, 8, 10 of that for Second Year Exhibitions, and section (*b*) of the following paper.

(A) HISTORY.

1. Describe the new constitution of Servius Tullius.

2. Write on the chief Roman deities.

3. Give the dates, the circumstances which led to, and an account of the battles of Cynoscephelae and Pydna.

4. Write an account of the First Triumvirate.

5. Tell what you know of the circumstances of the accession of the Emperor Claudius and of the events of his reign.

(B) LATIN COMPOSITION.

1. He no longer hesitated to move his camp and go to the borders of the Belgae. 2. It concerned the common safety that he might not have to fight with so great a number. 3. At the same time Darius, king of the Persians, determined to wage war in Europe. 4. Miltiades, by means of the forces which he had brought with him, defeated the enemy in a short time, and got possession of the whole country. Then settling the people in allotments, he regulated matters with perfect justice and enjoyed amongst them royal dignity. 5. When Caesar had heard what the envoys said, he demanded their senate and the children of their leaders as hostages. He explained to Divitiacus how greatly it concerned the Roman people that he should lead the forces of the Aedni into the country of the Bellovaci and lay waste their lands.

FIRST YEAR SUPPLEMENTAL.

THURSDAY, SEPTEMBER 20TH.

Examiners, ... { P. J. DAREY, LL.D., OFFICIER D'ACADÉMIE. J. L. MORIN, M.A.

1. Translate:

(*a*) Maître Corbeau sur un arbre perché
Tenait (1) en son bec un fromage.
Maître renard, par l'odeur alléché,
Lui tint (2) à peu près ce langage:
"Hé! bonjours, Monsieur du (3) corbeau,
Que vous êtes joli! que vous me semblez beau!
Sans mentir, si votre ramage
Se rapporte à votre plumage
Vous êtes le phénix des hôtes (4) de ces bois."

(1) (2) Explain the difference of the tenses.

(3) Explain *du*.

(4) What is the difference in French between *hosts* and *guests* ? why?

(*b*) Pour un âne enlevé deux voleurs se battaient :
L'un voulait le garder, l'autre le voulait vendre.
Tandis que coups de poing trottaient,
Et que nos champions songeaient à se défendre,
Arrive un troisième larron
Qui saisit maître aliboron.
L'âne c'est quelquefois une pauvre province ;
Les voleurs sont tel et tel prince.

2. Conjugate in the present indicative and subjunctive, the future and past indefinite, the following verbs : *Percher, tenir, mentir, vouloir.*

3. State four cases where the subjunctive mood is used in French. Give examples.

4. Give rules of agreement of adjectives with *gens*.

5. Write explanatory notes on :—

(*a*) The past participles of impersonal verbs.

(*b*) The past participles of reflective verbs.

Give examples.

6. Translate :

On the return of the spring the savages resumed their arms and took the field. The old man, who was still sufficiently robust to bear the fatigues of war, went out with them accompanied by his prisoner. The Abénakis marched more than two hundred leagues through the forests ; at last they arrived at a plain, where they discovered a British encampment. The old man showed it to the prisoner, watching his countenance. "There are thy brothers," said he to him ; " there are the enemies who are awaiting us to give us battle."

SUPPLEMENTAL EXAMINATION.

ENGLISH LITERATURE.

SHAKSPEARE,—A MIDSUMMER NIGHT'S DREAM.

TENNYSON,—GARETH AND LYNETTE.

1. How would you define Shakspere's play ? How do you know that it is an early play ?

2. Set forth the balance of characters in the *Dream*.

3. What historical and allegorical allusions do you find in it?

4. Whence did Shakespeare probably derive the story of the play of the mechanicals?

5. Trace Bottom through the play. What do you consider to be the leading features in the character of Theseus, Titania, Puck? Refer to the play in substantiation of your statements.

6. Explain the following: to do observance to a morn of May; hold or cut bowstrings; a gossip's bowl; childing autumn; gleek; rere-mice.

---

1. Select some feature which shows that the Idylls are a connected whole.

2. State the inner meaning of *Gareth and Lynette*, and show why it stands first.

3. Unfold the minuter allegory in *Gareth and Lynette*.

4. Describe the Lady of the Lake and each of the four Knights as faithfully as you can.

5. What idea have you formed of life at Arthur's court from your reading of *Gareth and Lynette*.

SUPPLEMENTAL EXAMINATION.

SECOND YEAR.

ENGLISH LITERATURE.

WEDNESDAY, SEPTEMBER 19TH :—A.M.

1. Write (*a*) on the Encyclopædists, (*b*) Rousseau.

2. Give Wordsworth's account of his early life, as written in the Prelude.

3. What do you know concerning the Anti-Jacobin and the Della Cruscan School of Poetry?

4. Mention poems of Coleridge and Southey, which you regard as evidence of their higher powers, and say why you have chosen them.

5. Scott: the influence of German literature on his Ballads; his characteristics, as displayed in his longer poems.

6. Byron: His satires; Manfred; and his place in literature.

SECOND YEAR EXHIBITIONS.

GREEK.

MONDAY, SEPT. 17TH :—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A., PH.D.

I. Translate :

A.

Ἐντεῦθεν ἐκκλησίαν ἐποίουν, εἰς ἣν ἡ βουλὴ εἰσήνεγκε τὴν ἑαυτῆς γνώμην Καλλιξένου εἰπόντος τήνδε· Ἐπειδὴ τῶν τε κατηγορούντων κατὰ τῶν στρατηγῶν καὶ ἐκείνων ἀπολογουμένων ἐν τῇ προτερᾳ ἐκκλησίᾳ ἀκηκόασι, διαψηφίσασθαι Ἀθηναίους πάντας κατὰ φυλάς· θεῖναι δὲ εἰς τὴν φυλὴν ἑκάστην δύο ὑδρίας· ἐφ' ἑκαστῃ δὲ τῇ φυλῇ κήρυκα κηρύττειν, ὅτῳ δοκοῦσιν ἀδικεῖν οἱ στρατηγοὶ οὐκ ἀνελόμενοι τοὺς νικήσαντας ἐν τῇ ναυμαχίᾳ, εἰς τὴν προτέραν ψηφίσασθαι, ὅτῳ δέ μή, εἰς τὴν ὑστέραν· ἂν δὲ δόξωσιν ἀδικεῖν, θανάτῳ ζημιῶσαι καὶ τοῖς ἕνδεκα παραδοῦναι καὶ τὰ χρήματα δημοσιεῦσαι, τὸ δ' ἐπι δέκατον τῆς θεοῦ εἶναι.

Xen. Hellenics, Bk. I.

B.

Οἱ δ' Ἀθηναῖοι πολιορκούμενοι κατὰ γῆν καὶ κατὰ θάλατταν ἠπόρουν τί χρὴ ποιεῖν, οὔτε νεῶν οὔτε συμμάχων αὐτοῖς ὄντων οὔτε σίτου· ἐνόμιζον δ' οὐδεμίαν εἶναι σωτηρίαν τοῦ μὴ παθεῖν ἃ οὐ τιμωρούμενοι ἐποίησαν, ἀλλὰ διὰ τὴν ὕβριν ἠδίκουν ἀνθρώπους μικροπολίτας οὐδ' ἐπὶ μιᾷ αἰτίᾳ ἑτέρᾳ ἢ ὅτι ἐκείνοις συνεμάχουν. διὰ ταῦτα τοὺς ἀτίμους επιτίμους ποιήσαντες ἐκαρτέρουν, καὶ ἀποθνησκόντων ἐν τῇ πόλει λιμῷ πολλῶν οὐ διελέγοντο περὶ διαλλαγῆς. ἐπεὶ

δὲ παντελῶς ἤδη ὁ σῖτος ἐπελελοίπει, ἔπεμψαν πρέσβεις παρ' Ἄγιν, βουλόμενοι σύμμαχοι εἶναι Λακεδαιμονίοις ἔχοντες τὰ τείχη καὶ τὸν Πειραιᾶ, καὶ ἐπὶ τούτοις συνθήκας ποιεῖσθαι.—Xen. Hellenics, Bk. II.

(*a*) ὅτω—explain form and case. (*b*) τοῖς ἔνδεκα—what were their duties? (*c*) τοῦ μὴ παθεῖν: account for the case and peculiar form of expression. (*d*) οὐδ' ἐπὶ μιᾷ—how does it differ from ἐπὶ οὐδεμιᾷ? (*e*) τοὺς ἀτίμους—who were the ἄτιμοι? (*f*) ἐκείνοις—who are meant?

II. Translate:

Πάντα δὴ ταῦτα δεῖ συνιδόντας ἅπαντας βοηθεῖν καὶ ἀπωθεῖν ἐκεῖσε τὸν πόλεμον, τοὺς μὲν εὐπόρους, ἵν' ὑπὲρ τῶν πολλῶν ὧν καλῶς ποιοῦντες ἔχουσι μικρὰ ἀναλίσκοντες τὰ λοιπὰ καρπῶνται ἀδεῶς, τοὺς δ' ἐν ἡλικίᾳ, ἵνα τὴν τοῦ πολεμεῖν ἐμπειρίαν ἐν τῇ Φιλίππου χώρᾳ κτησάμενοι φοβεροὶ φύλακες τῆς οἰκείας ἀκεραίου γένωνται, τοὺς δὲ λέγοντας, ἵν' αἱ τῶν πεπολιτευμένων αὐτοῖς εὔθυναι ῥᾴδιαι γένωνται, ὡς ὁπότ' ἄττ' ἂν ὑμᾶς περιστῇ τὰ πράγματα, τοιοῦτοι κριταὶ καὶ τῶν πεπραγμένων αὐτοῖς ἔσεσθε. χρηστὰ δ' εἴη παντὸς ἕνεκα.—Demosth. Olyn. I.

Φημὶ δὴ δεῖν ὑμᾶς ἅμα τοῖς μὲν Ὀλυνθίοις βοηθεῖν, (καὶ ὅπως τις λέγει κάλλιστα καὶ τάχιστα οὕτως ἀρέσκει μοι,) πρὸς δὲ Θετταλοὺς πρεσβείαν πέμπειν, ἥ τοὺς μὲν διδάξει ταῦτα, τοὺς δὲ παροξυνεῖ· καὶ γὰρ νῦν εἰσὶν ἐψηφισμένοι Παγασὰς ἀπαιτεῖν, καὶ περὶ Μαγνησίας λόγους ποιεῖσθαι. σκοπεῖσθε μέντοι τοῦτο, ὦ ἄνδρες Ἀθηναῖοι, ὅπως μὴ λόγους ἐροῦσι μόνον οἱ παρ' ἡμῶν πρέσβεις, ἀλλὰ καὶ ἔργον τι δεικνύειν ἔξουσιν, ἐξεληλυθότων ἡμῶν ἀξίως τῆς πόλεως, καὶ ὄντων ἐπὶ τοῖς πράγμασιν· ὡς ἅπας μὲν λόγος, ἂν ἀπῇ

τὰ πράγματα, μάταιόν τι φαίνεται καὶ κενόν, μάλιστα δὲ ὁ παρὰ τῆς ἡμετέρας πόλεως· ὅσῳ γὰρ ἑτοιμότατ' αὐτῷ δοκοῦμεν χρῆσθαι τοσούτῳ μᾶλλον ἀπιστοῦσι παντες αὐτῶ. πολλὴν δὴ τὴν μετάστασιν καὶ μεγάλην δεικτέον τὴν μεταβολήν, εἰσφέροντας, ἅπαντας, ἅπαντα ποιοῦντας ἑτοίμως, εἴπερ τις ὑμῖν προσέξει τὸν νοῦν. κἂν ταῦτα ἐθελήσητε ὡς προσήκει καὶ δεῖ, περαίνειν, οὐ μόνον, ὦ ἄνδρες Ἀθηναῖοι, τὰ συμμαχικὰ ἀσθενῶς καὶ ἀπίστως ἔχοντα φανήσεται Φιλίππῳ, ἀλλὰ καὶ τὸ τῆς οἰκείας ἀρχῆς καὶ δυνάμεως κακῶς ἔχοντα ἐξελεγχθήσεται.

Demosth. Olyn. II.

(*a*) What is the meaning of εὐθυνα in its official sense Derivation? (*b*) πολλὴν δή, etc. Remark on the construction of this sentence, noticing especially the order, and the construction of the participles. (*c*) What is the distinction between ἀρχῆς and δυνάμεως. (*d*) Show, by map or otherwise, the position of Olynthus, and describe Philip's attacks upon it

III. Translate, Herodotus, Bk. III. 38.

(*a*) In what dialect did Herodotus write? Enumerate the leading peculiarities of this dialect. (*b*) Give the Attic forms for ἑλοίατο, ἑωυτῶν, κατασιτέεσθαι, καλεομένους ἑρμηνέος, δοκέει. (*c*) οὐ γὰρ ἂν ἱροῖσι κτλ: write out in Greek the suppressed protasis. (*d*) In Boeckh, Frag. Pind., we read: Νόμος ὁ παντων βασιλεὺς Θνατῶν τε καὶ ἀθανατῶν Ἄγει δικαιῶν τὸ βιαιότατον Ὑπερτάτᾳ χερί. What would appear to have been the meaning of Pindar, and in what sense does Herodotus use the phrase νόμος παντων βασιλευς?

IV. Translate:

Socrates in Prison.

Καὶ ἦν ἤδη ἐγγὺς ἡλίου δυσμῶν· χρόνον γὰρ πολὺν διέτριψεν ἔνδον. Ἐλθὼν δ' ἐκαθέζετο λελουμένος, καὶ οὐ πόλλ ἄττα μετὰ ταῦτα διελέχθη, καὶ ἦκεν ὁ τῶν ἕνδεκα ὑπηρέτης καὶ στὰς παρ' αὐτόν, Ὦ Σώκρατες, ἔφη, οὐ καταγνώσομαι σοῦ ὅπερ ἄλλων καταγιγνώσκω, ὅτι μοι χαλεπαίνουσι καὶ καταρῶνται, ἐπειδὰν αὐτοῖς παραγγέλλω πίνειν τὸ φάρμακον ἀναγκαζόντων τῶν ἀρχόντων. Σὲ δ' ἐγὼ καὶ ἄλλως ἔγνωκα ἐν τούτῳ τῷ χρόνῳ γενναιότατον καὶ πραότατον καὶ ἄριστον ἄνδρα ὄντα τῶν πώποτε δεῦρο ἀφικομένων, καὶ δὴ καὶ νῦν εὖ οἶδ' ὅτι οὐκ ἐμοὶ χαλεπαίνεις, γιγνώσκεις γὰρ τοὺς αἰτίους, ἀλλ' ἐκείνους. Νῦν οὖν, οἷσθα γὰρ ἃ ἦλθον ἀγγέλλων, χαῖρέ τε καὶ πειρῶ ὡς ῥᾷστα φέρειν τὰ ἀναγκαῖα. Καὶ ἅμα δακρύσας μεταστρεφόμενος ἀπῄει. Καὶ ὁ Σωκράτης ἀναβλέψας πρὸς αὐτόν, Καὶ σύ, ἔφη, χαῖρε, καὶ ἡμεῖς ταῦτα ποιήσομεν. Καὶ ἅμα πρὸς ἡμᾶς, Ὡς ἀστεῖος, ἔφη, ὁ ἄνθρωπος· καὶ παρὰ πάντα μοι τὸν χρόνον προσῄει καὶ διελέγετο ἐνίοτε καὶ ἦν ἀνδρῶν λῷστος, καὶ νῦν ὡς γενναίως με ἀποδακρύει. Ἀλλ' ἄγε δή, ὦ Κρίτων, πειθώμεθα αὐτῷ, καὶ ἐνεγκάτω τις τὸ φάρμακον, εἰ τέτριπται· εἰ δὲ μή, τριψάτω ὁ ἄνθρωπος. Καὶ ὁ Κρίτων, Ἀλλ' οἶμαι, ἔφη, ἔγωγε, ὦ Σώκρατες, ἔτι ἥλιον εἶναι ἐπὶ τοῖς ὄρεσι καὶ οὔπω δεδυκέναι. Καὶ ἅμα ἐγὼ οἶδα καὶ ἄλλους πάνυ ὀψὲ πίνοντας. ἐπειδὰν παραγγελθῇ αὐτοῖς, δειπνήσαντάς τε καὶ πιόντας εὖ μάλα, καὶ ξυγγενομένους γ' ἐνίους ὧν ἂν τύχωσιν ἐπιθυμοῦντες. Ἀλλὰ μηδὲν ἐπείγου· ἔτι γὰρ ἐγχωρεῖ

SECOND YEAR EXHIBITIONS.

LATIN.

MONDAY, SEPT. 17TH:—AFTERNOON, 2 TO 5.

Examiner, ... A. JUDSON EATON, M.A., PH.D.

(A) VIRGIL, Georgics, Bk. I.

1. Translate:

Nec tamen, haec cum sint hominumque boumque labores
Versando terram experti, nihil inprobus anser
Strymoniaeque grues et amaris intiba fibris
Officiunt aut umbra nocet. Pater ipse colendi
Haud facilem esse viam voluit, primusque per artem
Movit agros, curis acuens mortalia corda,
Nec torpere gravi passus sua regna veterno.
Ante Iovem nulli subigebant arva coloni;
Ne signare quidem aut partiri limite campum
Fas erat: in medium quaerebant, ipsaque tellus
Omnia liberius, nullo poscente, ferebat.
Ille malum virus serpentibus addidit atris,
Praedarique lupos iussit, pontumque moveri,
Mellaque decussit foliis, ignemque removit,
Et passim rivis currentia vina repressit,
Ut varias usus meditando extunderet artis
Paulatim, et sulcis frumenti quaereret herbam,
Ut silicis venis abstrusum excuderet ignem.

2. (*a*) What was the main object of the poet in writing the Georgics? At whose suggestion were they written? (*b*) Give the derivation of *Arcturus, Lethaeo, Hyades, argutus, autumnus, scilicet.*

(B) HORACE, Odes, Bk. I.

3. Translate:

Quid dedicatum poscit Apollinem
Vates? quid orat de patera novum
Fundens liquorem? Non opimas
Sardiniae segetes feracis;
Non aestuosae grata Calabriae
Armenta; non aurum aut ebur Indicum;
Non rura quae Liris quieta
Mordet aqua taciturnus amnis.
Premant Calena falce, quibus dedit
Fortuna, vitem; dives et aureis

Mercator exsiccet cullullis
Vina Syra reparata merce,
Dis carus ipsis, quippe ter et quater
Anno revisens aequor Atlanticum
Impune. Me pascunt olivae,
Me cichorea levesque malvae.
Frui paratis et valido mihi,
Latoë, dones, et, precor integra
Cum mente, nec turpem senectam
Degere nec cithara carentem.

4. (*a*) Name the metre, and write out the scheme. (*b*) What was the occasion which called forth this ode? (*c*) Write brief notes on: (1) *potens Cypri;* (2) *tristes Hyadas;* (3) *Maeonii carminis alite;* (4) *insanientis sapientiae;* (5) *pulvinar.*

(C) CICERO: Pro Lege Manilia and Pro Archia.

5. Translate:

(*a*) Quam multos scriptores rerum suarum magnus ille Alexander secum habuisse dicitur! Atque is tamen, cum in Sigeo ad Achillis tumulum astitisset: "O fortunate," inquit, "adulescens, qui tuae virtutis Homerum praeconem *inveneris.*" Et vere. Nam nisi Ilias illa *exstitisset*, idem tumulus, qui corpus eius contexerat, nomen etiam obruisset.

(*b*) Nam ut primum *ex pueris excessit* Archias atque ab eis artibus, quibus aetas puerilis ad humanitatem informari solet, se ad scribendi studium contulit, primum *Antiochiae*—nam ibi natus est *loco nobili*,—celebri quondam *urbe* et copiosa atque eruditissimis hominibus liberalissimisque *studiis* adfluenti, celeriter antecellere *omnibus* ingenii *gloria* contigit.

(*c*) Age vero ceteris in rebus qualis sit temperantia, considerate. Undè illam tantam celeritatem et tam incredibilem cursum inventum putatis? Non enim illum eximia vis remigum, aut ars inaudita quaedam gubernandi, aut venti aliqui novi tam celeriter in ultimas terras pertulerunt, sed hae res, quae ceteros remorari solent, non retardarunt: non avaritia ab instituto cursu ad praedam aliquam devocavit, non libido ad voluptatem, non amoenitas ad delectationem, non nobilitas urbis ad cognitionem, non denique labor ipse ad quietem: postremo signa et tabulas ceteraque ornamenta Graecorum oppidorum, quae ceteri tollenda esse arbitrantur, ea sibi ille ne visenda quidem existimavit. Itaque omnes quidem nunc in his locis Cn. Pompeium sicut aliquem, non ex hac urbe missum, sed de caelo delapsum intuentur: nunc denique incipiunt credere, fuisse homines Romanos hac quondam continentia; quod iam nationibus exteris incredibile ac falso memoriae proditum videbatur.

6. (*a*) Remark on the construction of italicized words in the above extracts. (*b*) Write a short introduction to the Oration Pro Lege Manilia.

7. Translate at sight:

Caesar and Pompey contrasted.

Nec quemquam iam ferre potest, Caesarve priorem,
Pompeiusve parem. Quis iustius induit arma ?
Scire nefas : magno se iudice quisque tuetur :
Victrix causa Deis placuit, sed victa Catoni.
Nec coïere pares : alter vergentibus annis
In senium longoque togae tranquillior usu
Dedidicit iam pace ducem ; famaeque petitor
Multa dare in volgus, totus popularibus auris
Inpelli, plausuque sui gaudere theatri,
Nec reparare novas vires, multumque priori
Credere fortunae ; stat magni nominis umbra,
Qualis frugifero quercus sublimis in agro
Exuvias veteres populi, sacrataque gestans
Dona ducum, nec iam validis radicibus haerens,
Pondere fixa suo est, nudosque per aëra ramos
Effundens, trunco non frondibus efficit umbram ;
At quamvis primo nutet casura sub Euro,
Tot circum silvae firmo se robore tollant,
Sola tamen colitur. Sed non in Caesare tantum
Nomen erat, nec fama ducis, sed nescia virtus
Stare loco, solusque pudor non vincere bello :
Acer et indomitus quo spes quoque ira vocasset,
Ferre manum, et numquam temerando parcere ferro,
Successus urguere suos, instare favori
Numinis inpellens quidquid sibi summa petenti
Obstaret, gaudensque viam fecisse ruina.

SECOND YEAR EXHIBITIONS.

GENERAL PAPER.

THURSDAY, SEPT. 20TH :—AFTERNOON, 2 TO 5.

Examiner,..... A. JUDSON EATON, PH.D.

1. Into what four tribes were the Hellenes divided, and what parts of Greece did they severally inhabit?

2. Relate the story of the War of the Seven against Thebes.

3. Give the date, and narrate the causes and chief events, of the Peloponnesian War.

4. Give an account of the Sack of Rome in 390 B.C. and in A.D. 410.

5. Describe the contest between Octavius and Antonius.

6. Translate and remark on the following constructions:

(*a*) πίνει τοῦ οἴνου. (*b*) μεταμέλει σοι τούτου. (*c*) τοῦτο ἤδη σοι πεπράκται. (*d*) ὄντος πολλῷ. (*e*) Ἀρ.σταρχω ἔδοτε ἡμέραν ἀπολογησασθαι. (*f*) Αἱρεθέντες ἐφ' ᾧτε ξυγγράψαινόμους, καὶ' οὔστινας πολιτενσοιντο.

7. Scan and write a note on any peculiarity of metre:

(*a*) Si pereo, hominum manibus periisse iuvabit.

(*b*) Ter sunt conati imponere Pelio Ossam.

8. Give a summary of rules to be observed in changing direct into indirect narration in Latin.

9. Haud dignus est qui diligatur—haud dignus est qui diligitur. Translate and explain the difference, if any, between these sentences.

10. Classify conditional sentences in Greek and Latin, illustrating by examples.

11. Translate into Greek: (1) If Socrates puts any question to you, you will answer him, will you not? (2) How much would your possessions fetch if they were sold? (3) He said that, if they did this, they would become more powerful than ever. (4) To deliberate quickly is a different thing from deliberating wisely. (5) But this being determined we cannot set out too soon.

12. Translate into Latin:

(*a*) He said that I was not wise; you say that I was not honest. (*b*) I expect the city will be captured. (*c*) Although my friend Tullius promised to help me, he forgot his promise. The consequence was that I was left while a boy, at Rome, without money to take me home; and there was no one to help me in my sore distress. Indeed, if the worthy Balbus had not seen and pitied me, I do not know what I should have done. His enemies used to say that he loved no one, and that no one loved him; but he asked me to come home with him, and treated me all the time I was in his house, like a man of humanity, as he was, with kindness and consideration.

SECOND YEAR EXHIBITIONS.

EUCLID, ALGEBRA, TRIGONOMETRY.

TUESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12:

Examiners, ... { ALEXANDER JOHNSON, LL.D. / REV. H. M. TORY, B.A.

Write the answers in separate books marked A and B, respectively, to correspond to the questions.

A

1. Prove that equiangular triangles have the sides about the equal angles proportional, and that the sides opposite the equal angles are homologous. (*a*) If three lines intersect in the same point, prove that two parallel lines drawn anywhere across them will be cut in the same ratio.

2. Construct a regular pentagon equal in area to a given quadrilateral.

3. Show that the fraction $\frac{2}{3+\sqrt{5}-2\sqrt{2}}$

can be reduced to $1+\sqrt{5}+\sqrt{10}-\sqrt{2}$.

4. A number of two digits is equal to seven times the sum of the digits; show that if the digits be reversed, the number thus formed will be equal to four times the sum of the digits.

5. Prove that

$$\cos A = \frac{2\cos\frac{1}{2}A - \sec\frac{1}{2}A}{\sec\frac{1}{2}A} \quad \frac{1}{1+\tan A \tan\frac{1}{2}A}.$$

6. Find the number of radians in the angle of an equilateral triangle.

B

7. Inscribe an equilateral and equiangular pentagon in a given circle.

8. Similar triangles are to one another in the duplicate ratio of their homologous sides.

9. The price of photographs is raised 3 shillings per dozen; and, in consequence, seven less than before are sold for a guinea; find the original price.

10. Solve the following equations:

(1) $x + y = \frac{15}{4}$; $x - y = xy$,

(2) $\frac{x}{a} + \frac{y}{b} = 1$; $\frac{x}{b} - \frac{y}{a} = 1$,

(3) $\sqrt{7x+1} - \sqrt{3x+10} = 1$.

11. Prove the following relations :

(1) $\tan^2\theta - \sin^2\theta = \tan^2\theta . \sin^2\theta$,

(2) $(\operatorname{cosec}\theta - \cot\theta)^2 = \frac{1-\cos\theta}{1+\cos\theta}$,

(3) $\sin A = \frac{2\tan\frac{A}{2}}{1+\tan^2\frac{A}{2}}$

(4) $\frac{\tan A}{\tan 2A - \tan A} = \cos 2A$.

12. In any triangle show that

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}, \text{ and}$$

$$\cos\frac{A}{2} = \sqrt{\frac{s(s-a)}{bc}} \text{ when } s = \frac{a+b+c}{2}.$$

SECOND YEAR EXHIBITIONS.

GEOMETRY.

TUESDAY, SEPTEMBER 18TH :— 2 TO 5 P M.

Examiners, ... { ALEX. JOHNSON, LL.D. / REV. H. M. TORY, B.A.

Write the answers on separate books marked A and B.

A

1. Prove that any two points subtend at the centre of a circle an angle equal to that between their polars.

2. Through a given point without a given circle, any transversal is drawn, cutting the circle, and a point taken on it, such that the reciprocal of its distance from the given point is equal to the sum of the reciprocals of the intercepts between the given point and the circle ; find the locus of the point of section.

3. Given six points on a straight line; find a seventh point on the given line, such that the anharmonic ratio of it and three of the points taken in assigned order shall be equal to the anharmonic ratio of it and the other three points taken in an assigned order.

4. Given the vertical angle, the perpendicular on the base, and the sum of the two sides; construct the triangle.

5. Given the base of a triangle, the difference of the sides and the locus of the vertex a fixed straight line; construct the triangle.

6. Describe a circle touching a given straight line and two given circles.

B

7. The diagonals of a quadrilateral inscribed in a circle are as the sums of the rectangles under the pairs of sides, terminated in each diagonal.

8. The perpendiculars from the middle point of the base of a triangle on the bisectors of the internal and external vertical angles cut off from the two sides portions equal to half the sum or half the difference of the sides.

9. Describe a circle, which shall bisect three given circumferences.

10. Any quadrilateral is divided by a straight line into two others; prove that the intersection of the diagonals of the three lie in a straight line.

11. If through any point inside or outside a circle secants be drawn, the straight lines joining the extremities of the chords intersect on the polar of that point.

12. The distances of any two points from the centre of a given circle are to one another as the distances of each point from the polar of the other.

ENTRANCE EXAMINATION.

ENGLISH GRAMMAR.

WEDNESDAY, SEPT. 19TH :—9 TO 12 A.M.

HIGHER ENTRANCE EXAMINATION.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Classify substantives and adjectives under the heads Notional and Relational. Where will adverbs, prepositions and conjunctions stand? Explain the principle of the classification.

2. Explain what causes the difference in the pronunciation of the *th* in *thin*, and the *th* in *this*; and why the *f* of *wife* is changed in sign and pronunciation in the plural.

3. How would you show that *off* and *of*, *too* and *to* are identical? Connect the meanings of *of* in the following sentences: the light of the sun; you did it of your own accord; I will not take it of you.

4. Write *when it rained* as a substantive, adjective and adverbial clause.

5 Give the diphthongs in English. Comment on the italicized portions of rel*ief*, d*ea*d, r*ou*gh and Prus*sia*.

6. Use suffixes to convert the following adjectives to nouns: humble, wise, broad; and the following nouns to adjectives: grace, brother, wood. Of the suffixes, state which are English and which Classical.

7. Mention the auxiliary verbs. Give the function of each, and say what you know as to its primitive meaning.

8. Give the origin of *but*, *that* and *it*, and their uses in modern English; also the uses of *half*.

9. Distinguish clearly between the uses of the gerund and participle.

10. Fill up the ellipses in

What if it does rain?
On my word of honour, the thing is absurd.
As for William, he will never succeed.
You might do worse than make the attempt.

11. Analyse

(*a*) My thought whose murder yet is but fantastical
Shakes so my single state of man, that function
Is smothered in surmise; and nothing is
But what is not.

(*b*) How would you analyse the following sentences ?

I am fifteen years of age,
I am fifteen years old.

SECOND YEAR EXHIBITIONS.

Candidates will answer the last eight ques ions in the Higher Entrance Paper, and also the following :

12. Classify English consonants ; select those which illustrate Grimm's Law, and use them in illustration.

13. Make Etymological notes on their, stirrup, folks, doom and deem; honor and honour; now-a-days, those, queen.

SECOND YEAR EXHIBITIONS.

ENGLISH LITERATURE.

FRIDAY, SEPT. 21ST :—2 to 5 P.M.

Examiners,..... { CHAS. E. MOYSE, B.A.
P. T. LAFLEUR, M.A.
CHAS. W. COLBY, Ph.D.

SHAKSPERE :—*As You Like It.*

1. Give some idea of the sources that may have been used for the plot of this play. Are there any grounds for fixing, approximately, the date *As You Like It?*

2. Describe the character of Rosalind ; and shew the importance of the part she plays. Discuss the assertion that she illustrates Shakspere's knowledge of womanly nature.

3. Narrate the events contained in Act V.

4. Shew the obvious influence of Pastoral Literature in the composition and language of this play.

5. Explain the following words and phrases :—Here feel we but the penalty of Adam ; the roynish clown ; And then he drew a dial from his poke ; Troilus had his brains dashed out with a Grecian club ; I will weep for nothing like Diana in the fountain ; good wine needs no bush.

TRENCH :—*Study of Words.*

1. Contrast the race qualities of Norman and Saxon as revealed by the testimony of language.

II. What attitude does Trench adopt towards the adoption of phonetic spelling? By what arguments does he urge his views?

III. How is it that synonyms arise? Give illustrations of various processes.

IV. Cite instances of degeneration in the use of English words.

V. Make notes on the following words: potato; dunce; church; *Gothic* architecture; nicotine; gipsy; daisy; shire; trivial; crystal.

SECOND YEAR EXHIBITIONS AND FIRST YEAR SUPPLEMENTAL.

FRENCH.

SEPTEMBER 20TH.

Examiners,..... { P. J. DAREY, LL.D., OFFICIER d'ACADÉMIE. / REV. J. L. MORIN, M.A.

1. Translate into English:

Socrate un jour faisant bâtir,
Chacun censurait son ouvrage:
L'un trouvait les dedans, pour ne lui point mentir,
Indignes d'un tel personnage.
L'autre blâmait la face, et tous étaient d'avis
Que les appartements étaient trop petits.
Quelle maison pour lui! L'on y tournait à peine;
"Plût (1) au ciel que de vrais amis
Telle qu'elle est, dit-il, elle pût être pleine."

Le bon Socrate avait raison
De trouver pour ceux-la trop grande sa maison.
Chacun se dit ami: mais bien fou qui s'y repose (2)
Rien n'est plus commun que ce nom,
Rien n'est plus commun que la chose.

LA FONTAINE, L. IV., f. xvii.

(1) Analyzez le mot *plût*.

(2) Quel mot pourrait-on employer au lieu de *s'y repose?*

3. Répondez aux deux questions suivantes, et expliquez vos réponses: *Madame, êtes-vous la malade;* et *Madame, êtes-vous malade?*

4. When does *chacun* take after it *son, sa, ses*, and when *leur, leurs?* Give examples.

5. Ecrivez correctement : *ni l'un ni l'autre n'est mon frère,* ou *ni l'un ni l'autre ne sont mes frères.* Expliquez votre réponse.

6. Quand traduisez-vous le *Pluperfect* anglais par le français *plus que parfait* et quand par le *passé antérieur?* Donnez des exemples.

7. Ecrivez correctement les participes passés suivants : La perte de la bataille est *attribué* au peu d'habileté qu'a *montré* le général. Les mille francs que m'a *coûté* mon voyage. Les peines que cette affaire m'a *coûté*. Les chaleurs qu'il *a fait* cet été. D'autres généraux s'étaient *fait battre* sur les frontières. Donnez les règles.

8. Traduisez : (At sight).

DIALOGUE DES MORTS par Fénélon.

Achille et Homère.

Achille. Je suis ravi, grand poète, d'avoir servi à t'immortaliser. Ma querelle contre Agamemnon, ma douleur de la mort de Patrocle, mes combats contre les Troyens, la victoire que je remportai sur Hector, t'ont donné le plus beau sujet de poème qu'on ait jamais vu.

Homère. J'avoue que le sujet est beau, mais j'en aurais bien pu trouver d'autres. Une preuve qu'il y en a d'autres, c'est que j'en ai trouvé effectivement. Les aventures du sage et patient Ulysse valent bien la colère de l'impétueux Achille.

Achille. Quoi? comparer le rusé et trompeur Ulysse au fils de Thétis, plus terrible que Mars! Va, poète ingrat, tu sentiras...

Homère. Tu as oublié que les ombres ne doivent point se mettre en colère. Une colère d'ombre n'est guère à craindre. Tu n'as pas d'autres à employer que de bonnes raisons.

Achille. Pourquoi viens-tu me désavouer que tu me dois la gloire de ton plus beau poème? L'autre n'est qu'un amas de contes de vieilles : tout y languit, tout sent son vieillard dont la vivacité est éteinte et qui ne sait point finir.

Homère. Tu ressembles à bien des gens qui, faute de connaître les divers genres d'écrire, croient qu'un auteur ne se soutient pas quand il passe d'un genre vif et rapide à un autre plus doux et plus modéré.....

SECOND YEAR GERMAN (DONALDA).

MONDAY, SEPT. 17TH, 1894:—MORNING, 9 TO 12.

Examiner,.....L. R. GREGOR, B.A.

1. Translate:—

(*a*) *Lassen Sie* ihn lieber gleich zum Nachtessen *einladen*; dann *können* wir Alles nach Bequemlichkeit abmachen.

(*b*) Nun fängt Der auch an! Hat die allgemeine Raserei auch dich angesteckt, armer Freund! Dein Compliment ist ganz artig; Aber bei meiner Tochter, und nicht bei meiner Nichte *hättest du das anbringen sollen.*

(*c*) Doch wo die Spur, die aus der Menge,
Der Völker flutendem Gedränge,
Gelocket von der Spiele Pracht,
Den schwarzen Thäter kenntlich macht?
Sind's Räuber, die ihn feig *erschlagen?*
That's neidisch ein *verborgner* Feind?
Nur Helios *vermag's* zu sagen,
Der alles Irdische bescheint.

2. Translate:—

Dem Grafen von Egmont zeigte er das Todesurteil zuerst vor „Das ist fürwahr ein strenges Urteil," *rief* der Graf mit entsetzter Stimme. „So schwer glaubte ich Seine Majestät nicht beleidigt zu haben, um eine solche Behandlung zu verdienen. Musz es aber sein, so unterwerfe ich mich diesem Schicksale mit Ergebung. *Möge* dieser Tod meine Sünden tilgen und weder meiner Gattin noch meinen *Kindern* zum Nachtheile gereichen!

3. Parse carefully the above words in italics.

4. Translate into German:—

(*a*) You know that Mr. Brown is one of our best artists; he never would have praised the picture, if it had not been very beautiful. (*b*) Madame A. has caught a cold. I heard her singing a few minutes ago. She is quite hoarse. She will not be able to sing to-night as she promised. (*c*) Hundreds of people lost their lives in this fire;—in the whole history of the world I know nothing more frightful. America is the land of great disasters. (*d*) Please tell me the time. I usually have my watch about me, but this morning I left it under my pillow. (*e*) Are you fond

of swimming? Yes, but the river is growing cold. What temperature do you like? About seventy.

5. Write a German composition of not less than one hundred and fifty words on any one of the following subjects: Gœthe, Germany, Pictures. The New Library.

6. Decline *the good* and the relative pronoun *der* in all genders and both numbers.

7. Give the 3rd Pers. Sing. Imperf. Indic. of the following verbs in the affirmative form: weissagen, lustwandeln, herankommen, bekommen, ankommen, gefallen.

SECOND YEAR EXHIBITIONS.

CHEMISTRY.

THURSDAY, SEPTEMBER 20TH:—AFTERNOON, 2 TO 5.

Examiner, ... B. J. HARRINGTON, B.A., PH.D.

1. What volume of Ammonia Gas at 20° C. and 770 mm. can be obtained by heating 10 grams of Sal-Ammoniac with excess of Quicklime?

2. How is Perchloric Acid prepared? What are its properties?

3. State what you know with regard to the Oxy-acids of Bromine and Iodine.

4. How is Marsh Gas prepared? What are its properties? How may its composition be ascertained with the endiometer?

5. Explain the use of the spectroscope in chemical analysis.

6. Distinguish between Cuprous and Cupric compounds, giving examples of each?

7. What do you understand by Valency and variation of Valency?

8. Give the preparation and properties of Chromium Trioxide. What takes place when an aqueous solution of Chromium Trioxide is treated (*a*) with Hydrochloric acid, (*b*) with Sulphuric acid?

9. Give the formula of each of the following bodies:—(1) Ammonia Alum, (2) Potassium Permanganate, (3) Green Vitriol, (4) Epsom Salts, (5) Borax.

10. In what ways are salts formed? Distinguish between normal, acid and basic salts.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

GREEK.

MONDAY, SEPT. 17TH:—MORNING, 9 TO 12.

Examiner,..... .....REV. GEORGE CORNISH, M.A., LL.D.

1. Translate:—Plato, Apologia, chap. X., down to *σφοδρῶς διαβάλλοντες*. (1) *ἀλλ' οὐχ αὐτοῖς—οὐκ αὐτοῖς*:—comment on these readings and show how they differ. (2) *Καὶ σφοδροὶ καὶ * * * πιθανῶς*; explain the metaphor here used.

2. Translate:—Crito, chap. XIII. (1) *ἐπειδὰν δοκιμασθῇ*:—explain the practice here referred to in the political life of Athens. (2) *εἰς ἀποικίαν ἰέναι μετοικεῖν ἀλλοσὶ ποι*:—distinguish and explain.

3. Translate:—Xenophon, Memorabilia, Bk. I. *(a)* chap. I., § 1. (1) *οἱ γραψάμενοι Σ*:—Give the names of the men here referred to. (2) Distinguish between *γράφειν* and *γράφεσθαι*. (3) *ὡς εἴη*:—why the Optative? (4) *τῇ πόλει*:—what use of the Dative? (5) *ἡ μὲν γάρ*:—give the etymology of *μέν* and account for the absence of the correlative *δέ*.

4. Translate:—ibid. chap. I., § 16. (1) *ἂν ἀεὶ διελόγειτο*:—how do you explain this use of *ἄν*? (2) *κἀλοὺς κἀγαθούς*:—give the exact meaning of this conventional phrase.

5. Translate:—Demosthenes, Olynthiac, III., § 30. *ὁ μὲν οὖν παρὼν καιρὸς * * * ὁ Φίλιππος σωθείς*.

6. (1) *μαιμακτηριών, ἑκατομβαιών, βοηδρομιών*,—what months according to our Calendar? (2) *τάλαντα ἑξήκοντα*,

—express this in sterling, or in our own currency. (3) *εἰσφορειν, κενάς*,—explain. (4) *ἠφίετε, ἠνώχλει*,—parse and explain the formation of the latter. (5) Explain — *θεωρικά, νομοθέτας, λειτουργίαι, ψήφισμα, προβούλευμα.*

7. Translate:—Thucydides, Bk. VI., chap. 89. *τῆς ἐμῆς διαβολῆς. τῷ ὑπόπτῳ μου*:—explain the use of the Genitive. *τὴν προξενίαν*:—explain.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

LATIN.

TUESDAY, SEPTEMBER 18TH:— MORNING, 9 TO 12.

Examiner,..... .....A. JUDSON EATON, M.A., Ph.D.

I. Translate, with short notes on words italicized:

(*a*) Nec Hannibalem fefellit suis se artibus peti: itaque cum per *Casilinum* evadere non posset petendique montes et iugum Calliculae superandum esset, necubi Romanus inclusum vallibus agmen adgrederetur, ludibrium oculorum specie terribile ad frustrandum hostem commentus principio noctis furtim *succedere ad montes statuit*. Fallacis consilii talis apparatus fuit: faces undique ex agris collectae fascesque virgarum atque aridi sarmenti, praeliganturque cornibus boum, quos domitos indomitosque multos inter ceteram agrestem praedam agebat: ad duo milia ferme boum effecta, Hasdrubalique negotium datum ut primis tenebris noctis id armentum *accensis cornibus* ad montes ageret, maxime, si posset, super saltus ab hoste insessos. Primis tenebris silentio mota castra, boves aliquanto ante signa acti. Ubi ad radices montium viasque angustas ventum est, signum extemplo datur ut accensis cornibus armenta in adversos concitentur montes. Et metus ipse relucentis flammae a capite earlorque iam ad vivum ad imaque cornuum adveniens velut stimulatos furore agebat boves. Quo repente discursu haud secus quam silvis montibusque accensis omnia circum virgulta ardere, capitumque irrita quassatio excitans flammam hominum passium discurrentium speciem praebebat. Qui ad transitum saltus insidendum locati erant, ubi in summis montibus ac super se quosdam ignes conspexere, circumventos se esse rati praesidio excessere: qua minime densae micabant flammae, velut tutissimum iter petentes summa montium iuga, tamen in quosdam boves palatos a suis gregibus inciderunt.

LIVY, BK. XXII., 16.

(*b*) Haec ubi dixit, paullulum commoratus, signa canere iubet, atque instructos ordines in locum aequum deducit. Dein, remotis omnium equis, quo militibus exaequato periculo animus amplior esset, ipse *pedes* exercitum pro loco atque copiis instruit. Nam, uti planities erat inter *sinistros* montis et ab dextera rupis aspera, octo cohortis in fronte constituit, reliquarum signa in subsidio artius collocat. Ab his centuriones, omnis lectos et evocatos, praeterea ex gregariis militibus optumum quemque armatum in primam aciem subducit. *C. Manlium* in dextera, Faesulanum quendam in sinistra parte curare iubet; ipse cum libertis et colonis propter aquilam assistit, quam *bello Cimbrico* C. Marius in exercitu habuisse dicebatur. At ex altera parte C. Antonius, pedibus aeger, quod proelio adesse nequibat, M. Petreio legato exercitum permittit. Ille cohortis veteranas, quas tumulti causa conscripserat, in fronte, post eas ceterum exercitum in subsidiis locat. Ipse *equo* circumiens, unumquemque nominans appellat, hortatur, rogat ut meminerint se contra latrones inermis pro patria, pro liberis, pro aris atque focis suis certare. Homo militaris, quod *amplius annos triginta tribunus* aut *praefectus* aut *legatus* aut praetor cum magna gloria in exercitu fuerat, plerosque ipsos factaque eorum fortia noverat; ea commemorando militum animos accendebat. SALLUST, CATILINE.

II. Translate, Horace, Ep. Bk. I.; (*a*) I., 4., 1-7; (*b*) I. 8, 21-36.

III. Writes notes, grammatical or explanatory, on the following:

(*a*) Magna coronari contemnat Olympia. (*b*) Imi derisor lecti. (*c*) Vir bonus et sapiens dignis ait esse paratus. (*d*) Indictis Latinis. (*e*) Strenua inertia. (*f*) Sciorum pumice mundus.

IV. Translate, Virgil, Georgics, Bk. II., vss. 136-160.

V. (*a*) What, in your judgment, is the construction of *silvae* (v. 136)? What other construction is possible? (*b*) Give the location of Hermus Bactra, Panchaia, Massicus, Clitumnus, Larius, Benacus. What allusion in line 140. (*d*) Scan, and note a peculiarity of metre, in verse 144. (*e*) *pomis utilis:* what ambiguity in this expression?

CICERO ATTICO SAL.

VI. Translate:

Quod me ad vitam vocas, unum efficis, ut a me manus abstineam; alterum non potes, ut me non nostri consilii vitaeque poeniteat. Quid enim est, quod me *retineat*, praesertim si spes ea non est, quae nos proficiscentes prosequebatur? Non faciam, ut enumerem miserias omnes, in quas incidi per summam iniuriam, et scelus non tam inimicorum meorum, quam *invidorum*, ne et meum maerorem exagitem et te in eumdem luctum vocem. Hoc affirmo, neminen umquam tanta calamitate esse affectum, nemini mortem magis optandam fuisse; cuius oppe tendae tempus honestissimum praeter-

missum est. Reliqua tempora non sunt iam ad medicinam, sed ad finem doloris. De republica video te colligere omnia, quae putes aliquam spem mihi posse afferre mutandarum rerum: quae quamquam exigua sunt, tamen, quoniam placet, exspectemus. Tu nihilo minus, si properaris, nos consequere. Nam aut accedemus in Epirum aut Brundisium per Candaviam ibimus. Dubitationem autem de Epiro non inconstantia nostra afferebat, sed quod de fratre, ubi eum visuri essemus, nesciebamus. Quem quidem ego nec quo modo visurus nec ubi dimissurus sim, scio. Id est maximum et miserrimum mearum omnium miseriarum. Ego et saepius ad te et plura scriberem, nisi mihi dolor meus cum omnes partes mentis, tum maxime huius generis facultatem ademisset. Videre te cupio. Cura ut valeas. Dat. prid. Kal. Mai. Brundisii.

VII. Pridie idus Febr. haec scripsi ante lucem; eo die apud Pomponium in eius nuptiis eram cenaturus. Translate, according to the English idiom, writing a note on the tense of *scripsi* and *cenaturus sum*.

VIII. Translate, at sight:

Hannibali alia in his locis bene gerendae rei fortuna oblata est. M. Centenius fuit cognomine Penula, insignis inter primi pili centuriones et magnitudine corporis et animo: is perfunctus militia per P. Cornelium Sullam praetorem in senatum introductus petit a patribus, uti sibi quinque milia militum darentur: se peritum et hostis et regionum brevi operae pretium facturum et, quibus artibus ad id locorum nostri et duces et exercitus capti forent, eis adversus inventorem usurum. Id non promissum magis stolide quam stolide creditum, tamquam eaedem militares et imperatoriae artes essent: data pro quinque acto milia militum, pars dimidia cives pars socii. Et ipse aliquantum voluntariorum itinere in agris concivit ac prope duplicato exercitu in Lucanos pervenit, ubi Hannibal nequiquam secutus Claudium substiterat. Haud dubia res est, quippe inter Hannibalem ducem et centurionem, exercitusque alterum vincendo veteranum, alterum novum totum, magna ex parte etiam tumultuarium ac semermem. Ut conspecta inter se agmina sunt et neutra pars detractavit pugnam, extemplo instructae acies. Pugnatum tamen, ut in nulla pari re, duas amplius horas, concitata et, donec dux stetit, invicta Romana acie. Postquam is non pro vetere fama solum sed etiam metu futuri dedecoris, si sua temeritate contractae cladi superesset, obiectans se hostium telis cecidit, fusa extemplo est Romana acies. Sed adeo ne fugae quidem iter patuit omnibus viis ab equite insessis, ut ex tanta multitudine vix mille evaserint, ceteri passim alii alia peste absumpti sint.—Livy, Bk. XXV. 19.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

GREEK AND LATIN PROSE COMPOSITION.

MONDAY, SEPT. 17TH: —AFTERNOON, 2 TO 5.

Examiners,..... .... { REV. GEO. CORNISH, M.A., LL.D. / DR. EATON.

(A) Translate into Greek :—

1. Pythagoras used to say that these two excellent things had been given by the gods to men, speaking truth and doing good. 2. The King hoped that the Athenians would come out against him and not suffer their land to be laid waste. 3. Gelon, after having conquered the Carthaginians at Himera, brought the whole of Sicily under his sway. 4. So long as Pericles was their leader, the Athenians performed many noble achievements. 5. The general happened to be present; had he not, the heavy-armed infantry of the enemy would have entered the town without being discovered. 6. Having said these things they took their departure; when this had been said they took their departure.

(B) Translate into Latin :—

THE BATTLE OF THE TREBIA.

Scipio, finding that the open plains were not a suitable battle-field for the Romans, on account of the superiority of the Carthaginian cavalry, hastened across the Po to Placentia. Occupying a strong position there, he waited until his colleague arrived from Sicily. Sempronius had already sent his troops to Ariminum; thence he marched to the Trebia, where he effected a junction with Scipio. Hannibal was eager to force the battle while the better of the Roman generals was disabled by a wound, and resolved to lure the impetuous and headstrong Sempronius to an engagement. By ordering the Numidian cavalry to cross the Trebia and discharge missiles at the sentries, and then to retreat gradually, he drew the Roman army after him across the river. It was towards mid-winter, and the day was cold, and snow filled the air. The Romans, pursuing the retreating Numidians, had to wade breast-deep through the icy stream, as the piercing sleet blew in their faces. The men, numbed with cold, tired and hungry, for they had marched hurriedly out without their breakfast, were obliged to face the Carthaginians, who had made their limbs supple with oil, and leisurely enjoyed their morning meal. In the battle that followed, the Romans met with a crushing defeat, and thousands perished on the retreat, in the river and by the cold.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

ANCIENT HISTORY.

TUESDAY, SEPTEMBER 18TH :—AFTERNOON, 2 TO 5.

Examiners,..... .... { REV. GEO. CORNISH, M.A., LL.D. / DR. EATON.

1. Give the geographical limits and divisions, (1) of Greece Proper; (2) of Greek Colonization.

2. (*a*) Trace briefly the growth of the leading Grecian States, naming those that in succession held the hegemony of Greece. (*b*) What events and causes led to the establishment and overthrow of the supremacy of Athens?

3. (*a*) An account of the legislation of Lycurgus. (*b*) Distinguish between the Σπαρτιῆται, the Περίοικοι, the Εἵλωτες, the Νεδαμώδες, and the Μόθωνες, under the government of Sparta.

4. (*a*) What character did the Greeks attach to the word τραννος? (*b*) Specify the principal Despotisms established in Greece.

5. Give the geographical position of Chersonesus (1) Taurica, (2) Thracica, and (3) Cimbrica, with modern names where you can.

6. (*a*) Write a geographical description of Eubœa. (*b*) Derive and explain the terms *Euripus*, *Cyclades*, *Sporades*. (*c*) Name the islands on the west of Greece, giving modern names of any.

7. When and on what grounds did Rome first interfere in Grecian affairs?

8. (*a*) Write a short account of the reforms of Servius Tullius. (*b*) Give the names of the Roman kings in chronological order, and mention those that were of foreign extraction.

9. Give the dates of the following measures, and in each case state the advantages gained by the Plebs :—(*a*) The Decemviral Legislation. (*b*) The Valerian Laws. (*c*) The Licinian Laws. (*d*) The Lex Hortensia.

10. Give (by map or verbal description) the geographical position of the following, and state very briefly with what events they were severally connected :—Allia, Ægates, Zama, Caudine Forks, Saguntum, Agrigentum, Capua.

11. Write a short account of the war with Pyrrhus.

12. Over what nations did the Roman sway extend at the close of the second Punic war.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

ENGLISH LITERATURE.

WEDNESDAY, 19TH SEPT:—MORNING, 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

(N.B.—The answers to the two divisions of the paper are to be kept distinct.)

A. MILTON, *Paradise Lost, Bks. I. and II.*

1. Classify *Paradise Lost* among epics, showing how it resembles the epic in general, and how it differs from the other great epics in Grecian, Latin and Mediæval literature, respectively.

2. Discuss and illustrate from the poem: (*a*) Milton's unsurpassed splendour in the invention of comparisons; (*b*) his scholarly and precise language; (*c*) his profound knowledge of the classics; (*d*) his political sympathies.

3. On what grounds is it generally held that *Bks. I and II* are the noblest in *Paradise Lost?*

4. Narrate, with the help of appropriate quotation, the voyage of Satan to Earth as told in Bk. II.

B. SHAKSPERE, *The Tempest.*

1. Explain why *The Tempest* has been described as "mainly operatic and lyrical."

2. Contrast Ariel and Caliban. Whence has Shakspere been said to have derived his ideas for the latter character?

3. Explain the *grouping* of characters in sets throughout this play; and discuss briefly the dramatic contrasts that result from it.

4. Give in outline the events contained in Act. IV.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIP.

ENGLISH LITERATURE AND LANGUAGE

FRIDAY, SEPT. 21ST:—2 TO 5 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A., P. T. LAFLEUR, M.A., CHAS. W. COLBY, PH.D.

A. SPALDING:—*History of English Literature.*

1. Make some notes on the Regular and the Irregular School of Dramatic Art, giving examples of either from English Literature.

2. Give some account, with dates, of the dramatic work of Marlowe. Note his literary excellences.

3. Explain the purpose and the specific literary merit of *The Faerie Queene*. Show the predominating influences that affected the poetry of Spenser.

4. Write a short account of Hudibras, The Compleat Angler, an Essay concerning Human Understanding. Give the name of the author and the approximate date.

5. Explain the influence of Addison on the prose writing of his time.

6. "The nineteenth century is chiefly distinguished for its lyrical poetry and its prose fiction." Discuss this assertion.

B. TRENCH:—*Study of Words.*

(Candidates will take the paper set for the Second Year Exhibitions.)

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

ENGLISH COMPOSITION.

Examiners, ... { CHAS. E. MOYSE, B.A. P. T. LAFLEUR, M.A.

1. Explain and illustrate:—Purity in diction, Paraphrase, Explanatory Comparison, Poetical Comparison, Tautology.

2. "The emphatic positions in the sentence are the beginning and the end." Prove this with the help of examples.

3. Discuss briefly the following point: "No fixed rule can be given for using Saxon rather than Latin derivatives in ordinary English prose."

4. Write an essay of not less than two full pages on any *one* of the following subjects:—

A. The Recent Labour Troubles at Chicago.
B. An Interesting Journey or Voyage.
C. The Essence of Good Manners.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

FRENCH.

SEPTEMBER 20TH.

Examiners, ... { PROF. P. J. DAREY, LL.D., Officier d'Académie.
REV. J. L. MORIN, M.A.

1. Qui est-ce qui était le père de Britannicus ? Et qui était sa mère ?

2. Répondez à la même question pour Néron ?

3. Expliquez en détail par quelles intrigues Néron fut-il amené au trône des Césars.

4. Expliquez tout au long les caractères de Burrhus et de Sénèque Quelle était leur mission a la cour ?

5. Quel est le personnage tout à fait opposé à celui de Burrhus ? Caractérisez le.

6. Pourquoi a-t-on appelé Britannicus la pièce des connaisseurs ? Quels sont les deux genres d'intérêt *Britannicus* réunit il ?

7. Traduisez en anglais :

Que faites-vous ?
C'est votre frère. Hélas ! c'est un amant jaloux !
Seigneur, mille malheurs persécutent sa vie ;
Ah ! son bonheur peut-il exciter votre envie ?
Souffrez que, de vos cœurs rapprochant les liens,
Je me cache à vos yeux et me dérobe aux-siens,
Ma fuite arrêtera vos discordes fatales ;
Seigneur, j'irai remplir le nombre des vestales.
Ne lui disputez plus mes vœux infortunés ;
Souffrez que les dieux (1) seuls en soient importunés.

8. Qui est-ce qui parle dans le morceau ci-dessus ? A qui et de qui ?

9. Quel est le masculin de ce mot ?

10. En quoi consiste l'interêt des *Femmes savantes* ? Quels sont les deux caractères les plus intéressants de cette comédie ?

11. Ecrivez correctement la phrase suivante : *Je cherche quelqu'un qui me rende ou qui me rendra ce service.* Expliquez votre réponse.

12. Quand *Rabelais* et Descartes vécurent-ils ? Quels furent leurs principaux ouvrages ? Où passèrent-ils une grande partie de leur vie, et où moururent-ils ?

13. Traduisez (*at sight*) :—

Among the French missionaries whose travels on this continent attracted much attention in his own day, and, in ours, are regarded at once with curiosity and distrust, was Louis Hennepin, a Franciscan. He was a native of Holland, and born in the year 1640. Quite early in life the instinct of travel asserted itself; for as one of that privileged mendicant fraternity whom every traveller has encountered in Sicily or Spain, he wandered asking alms through Italy and Germany. It was while thus following the vocation of a pious beggar at Calais and Dunkirk that Hennepin's wandering passion became infected with that desire to cross the sea, which sooner or later seizes upon all instinctive vagabonds.

SCIENCE SCHOLARSHIPS.

FIRST PAPER.

TUESDAY, SEPTEMBER 18TH, 1894 :—9 TO 12 A.M.

Examiner,..... D. P. PENHALLOW, B.Sc.

1. Give a concise statement of the law relating to cross and close fertilization of plants, and cite in illustration cases which may have come under observation during the past season.

2. Explain the nature and cause of polyembryony, and cite instances of its occurrence.

3. Give a concise account of the absorption of water by the roots of plants, with experimental proof of such action.

4. Outline fully the characteristics of a typical (1) Monocotyledonous Angiosperm and (2) a Gymnosperm.

5. Show what relations exist between the temperature of a plant and that of the medium in which it lives, citing examples to show what extremes of temperature may be endured.

6. Give a concise account of the function of transpiration and its relation to the movement of fluids in the plant.

7. Give a full account of the anatomy of the leaf in an Angiospermous plant, and show the relation between structural variation and adaptation to special functions.

8. Give a concise account of the structure and distribution of the root, in the principal groups of plants.

9. State the morphological differences to be observed between the reproductive organs of (1) a fern, (2) a Gymnosperm, (3) a Monocotyledonous Angiosperm, and (4) a Dicotyledonous Angiosperm.

10. Outline the anatomy of an endogenous stem.

SCIENCE SCHOLARSHIPS.

BOTANY.

SECOND PAPER.

TUESDAY, SEPT. 18TH, 1894:—2 TO 5 P. M.

Examiner, ... D. P. PENHALLOW, B.Sc.

1. State what structures are represented in specimen No. 1. Give an account of the life history of this genus, and enumerate any Canadian representatives of the Group with which you may be familiar.

2. Show what structures are represented in specimen No. 2. State if the family has any Canadian representatives; if so, give examples of species, and show what general habit of growth characterizes north temperate plants of this family. State if any of these plants possess economic value.

3. State what group of plants is represented by specimen No. 3. Show what structures are present; outline the general distribution of the members of this alliance, and state what economic value they possess.

4. Show how the families Roseceae, Saxifragaceae and Ranunculaceae may be distinguished.

5. Distinguish Compositae from Dipsaceae, Valerianaceae and Caprifoliaceae.

6. Cite three families of plants of Canadian distribution, of leading economic value; show what species are chiefly employed and for what purposes.

7. Describe the leading characteristics of the Filices, and show in what principal respects the Lycopodiaceae differ.

8. Rudbeckia hirta, Chrysanthemum leucanthemum, scrophutaria nodosa, Verbascum thapsus, Aralia racemosa, Hieracium aurantiacum, Caltha palustris. State whether these plants are indigenous or introduced, and if the latter, from what source. Explain some of the methods by which plants are distributed and become established in new centres.

Determination of species on Thursday, 9 to 12 a.m.

MATHEMATICAL AND NATURAL SCIENCE SCHOLARSHIPS.

FORMAL LOGIC.

1. Give with examples the different kinds of terms in a general table.

2. Discuss the principal *causes* that give rise to ambiguity in terms.

3. What is meant by Opposition of Propositions? Explain fully and clearly the difference between contrary and contradictory opposition.

4. Give (*a*) the converse of:—

All is not gold that glitters.
Some liquids are not transparent.

(*b*) the contrapositive of

All matter has weight;

and explain the process in each case.

5. Give the moods of the Third Figure; and construct a syllogism (with words, *not* with symbols) in the first and the last of these moods.

6. Explain and illustrate the following fallacies:—Four terms under the guise of three, with an example *not* drawn from the text-book; post hoc ergo propter hoc; Argumentum ad Hominem.

7. Discuss the following cases of reasoning:—

(*a*) All desires are not blameable; all desires are liable to excess; therefore some things liable to excess are not blameable.

(*b*) The object of war is durable peace; therefore soldiers are the best peace-makers.

8. Explain and illustrate: The difference between Observation and Experiment, Analogy, Abstraction.

9. Give a synopsis of the chapter entitled, "Requisites of a Philosophical Language."

10. Contrast briefly, with the help of examples, Theory and Hypothesis.

SCIENCE SCHOLARSHIPS.

CHEMISTRY.

THURSDAY, SEPT. 20TH:—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A. Ph.D.

1. Give the names and formulæ of the Oxides and Oxy-acids of Phosphorus.

2. What are compound radicals? Give several examples.

3. Give the names and formulæ of the Oxides and principal salts of Lead.

4. What do you understand by the periodic system of the elements? Give the first two periods.

5. Distinguish between polymerism and metamerism, giving examples.

6. Describe any process for determining the vapour density of organic bodies.

7. What are Carbo-hydrates? Into what classes are they divided?

8. What is the principal Trihydric Alcohol? Give its properties.

9. Explain the relation of Naphthalene and Anthracene to Benzene.

10. Explain the meaning of the terms Ortho, Meta, and Para series, as applied to the Dimethyl Benzenes.

11. What volume of Marsh Gas at 20° C and 770 mm. can be obtained by heating 150 grams of Sodium Acetate with Caustic Soda?

MATHEMATICAL SCHOLARSHIP, 1894.

ANALYTICAL GEOMETRY—(*First Paper*).

MONDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Show that the curve

$$\frac{x^2}{a^2} - \frac{2xy}{ab} + \frac{y^2}{b^2} - \frac{2y}{a} - \frac{2y}{b} + 1 = 0$$

is a parabola touching the axes. Find the points of contact. Find also the locus of the middle points of a system of chords parallel to the line $y = mx$.

2. Find the radii of curvature at the points of contact in previous question, first investigating a general formula.

3. Taking the general equation of a conic, show that if through any two fixed points O and O' any two parallel lines OR and $O'r$ be drawn, the ratio of the rectangles $\frac{OR' \cdot OR''}{O'r \cdot O'r''}$ will be constant, whatever be the direction of these lines.

4. Transform $ax^2 + 2hxy + by^2 = c$ to the axes.

5. Express the perpendicular from the centre of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b} = 1$ on the tangent at $x'\ y'$ in terms of the angles which it makes with the axes.

6. Given the base and sum of sides of a triangle, find the locus of the centre of the inscribed circle.

7. Given a point and a right line or circle if on OP the radius vector to the right line or circle a part OQ be taken inversely as OP, find the locus of Q.

8. Find the equation of the tangent at any point $x'\ y'$ of the conic given by the general equation.

9. Find the equation which will represent the lines bisecting the angles between the lines represented by the equation

$$Ax^2 + Bxy + Cy^2 = 0.$$

10. Find the area of the triangle formed by joining three given points.

MATHEMATICAL SCHOLARSHIP, 1894.

ANALYTICAL GEOMETRY (*Second Paper*).

TUESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. If $S = 0$ and $S' = 0$ be the equations of two conics, show that there are three values of k for which $S - kS' = 0$ represents a pair of right lines. Explain what lines these are when the values of k are put in the equation.

2. Show that the equation of a circle osculating a parabola at a point $x'\ y'$ is

$$(p^2 + 4px')\ (y^2 - px) = \{2yy' - p\ (x + x')\}\ \{2yy' + px - 3px'\}.$$

3. Show that in general two conics similar and similarly placed meet each other in two infinitely distant points, and consequently only in two finite points.

4. If $l^2\alpha^2 + m^2\beta^2 = n^2\gamma^2$ denote a circle, its centre must be the intersection of the perpendiculars of the triangle $\alpha\beta\gamma$.

5. If three conic sections have one chord common to all, their three other chords will pass through the same point.

6. In all conic sections the radius of curvature is equal to the cube of the normal divided by the square of the semi-parameter.

7. If a circle be described on the major axis of any ellipse, and the ordinate MP at any point P on the ellipse be produced to meet at Q the circle described on the major axis. Prove that if F be the focus and C the centre of the ellipse

$$\tan \tfrac{1}{2}\ PFC = \sqrt{\frac{1-e}{1+e}}\ \tan \tfrac{1}{2}\ QCM.$$

8. If θ be the angle contained by the two tangents through the point $x'\ y'$ to the parabola $y^2 = 4mx$

prove
$$\tan\theta = \sqrt{\frac{y'^2 - 4mx'}{x' + m}}$$

9. Show that in general through a given point two conics (one an ellipse, the other an hyperbola) can be drawn confocal to a given conic.

10. If $\alpha'\ \beta'\ \gamma'$, $\alpha''\ \beta''\ \gamma''$ be the co-ordinates of any two points on the curve

$$l\beta\gamma + m\gamma\alpha + n\alpha\beta = 0$$

prove that the equation of the line joining them is

$$\frac{l\alpha}{\alpha'\ \alpha''} + \frac{m\beta}{\beta'\ \beta''} + \frac{n\gamma}{\gamma'\ \gamma''} = 0.$$

11. If a chord of constant length be inscribed in a circle, it will always touch another circle.

12. Express the equation of a line joining two given points $x'\ y'$, $x''\ y''$ in the form

$$l\alpha + m\beta + n\gamma = 0.$$

MATHEMATICAL SCHOLARSHIP, 1894.

TRIGONOMETRY—ALGEBRA.

FRIDAY, SEPTEMBER 21ST:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Define a solid angle (or "conical angle"). Prove that the solid angle subtended at the centre of a sphere whose radius is r by any area S of its surface is measured by $\frac{S}{r^2}$. What is the unit solid angle?

a. Prove that the sum of all the solid angles subtended at any point O *inside* a closed surface by all the elements of the surface is 4π.

β. If the point O be *on* the surface, the sum of all the solid angles is 2π.

2. Prove geometrically that any two sides of a spherical triangle are greater than the third.

3. In a spherical triangle prove

$$\cos A = \frac{\cos a - \cos b \cos c}{\sin b \sin c}.$$

4. In a right-angled spherical triangle the hypotenuse (c) is $72° 30$ and the side a is $45° 15'$; find the angle A.

5. The three sides of a spherical triangle $a = 46° 24'$, $b = 57° 14'$ $c = 81° 12'$; find the angle A.

6. Prove $2 \cos\theta = e^{i\theta} + e^{-i\theta}$; and $2i \sin\theta = e^{i\theta} - e^{-i\theta}$.

7. Calculate the value of π to three places of decimals by the aid of Machin's series ($2 \tan^{-1} \frac{1}{5} = \tan^{-1} \frac{5}{12}$).

8. Resolve $x^{2n} - 2x^n \cos n\theta + 1$ into factors when n is a whole number.

9. Define $\cosh x$ and $\sinh x$, and prove that

$$\tanh^{-1} x = \sinh^{-1} \frac{x}{\sqrt{1 - x^2}}.$$

10. Prove $\begin{vmatrix} 1 & 1 & 1 \\ \sin\alpha & \sin\beta & \sin\gamma \\ \cos\alpha & \cos\beta & \cos\gamma \end{vmatrix} = 4 \sin\tfrac{1}{2}(\alpha-\beta) \sin\tfrac{1}{2}(\beta-\gamma) \sin\tfrac{1}{2}(\alpha-\gamma)$

11. The reciprocal of a given determinant is the determinant whose constituents are the minors corresponding to each constituent of the given one.

12. Solve the equation

$$x^3 - 315\,x^2 - 19684\,x + 2977260 = 0.$$

MATHEMATICAL SCHOLARSHIP, 1894.

CALCULUS.

THURSDAY, SEPTEMBER 20TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If a sphere and its circumscribing cylinder be cut by planes perpendicular to the axes of the cylinder, prove that the intercepted portions of the surfaces are equal in area.

2. Prove that the surface of the prolate spheroid is equal to

$$2\pi b^2 + 2\pi \frac{ab}{e} \sin^{-1} e.$$

3. A curve is such that the intercept on a tangent to the curve between its point of contact and a fixed right line is a constant (a), prove that the whole area between its four infinite branches is πa^2.

4. Find the length of the above curve.

5. Find the equations of the cycloid, and prove that the whole area between the cycloid and its base is $3\pi a^2$.

6. Find the following integrals

$$\int \frac{1+x^2}{1-x^2} \frac{dx}{\sqrt{1+x^2+x^4}}; \quad \int \frac{dx}{\{(a^2+x^2)^{\frac{1}{2}}+x\}^{\frac{1}{2}}}; \quad \int \frac{\cos^4\theta\, d\theta}{\sin\theta}.$$

7. Find the formula of reduction for the integral

$$\int \frac{x^m\, dx}{(a+2bx+cx^2)^n}.$$

8. Integrate

$$\int \frac{d\theta}{\sin^2\theta \cos^2\theta}; \quad \int \sin^2\theta \cos^7\theta\, d\theta; \quad \int \frac{dx}{x(a+bx^2)^2}.$$

9. Investigate a formula for the radius of curvature of a plane curve, and find it for the catenary

$$y = \frac{a}{2}\left(e^{\frac{x}{a}} + e^{-\frac{x}{a}}\right).$$

10. Find at what point the subtangent to the curve whose equation is

$$2y^2 = a^2(a - x)$$

is a maximum.

11. Find a maximum value of

$$u = a \cos x + b \cos 2x.$$

12. Find the value of

$$\frac{(a^2 - x^2)^{\frac{1}{2}} + (a - x)^{\frac{3}{2}}}{(a^3 - x^3)^{\frac{1}{2}} + (a - x)^{\frac{1}{2}}} \text{ when } x = a.$$

FACULTY OF APPLIED SCIENCE.

ENTRANCE EXAMINATIONS,

1894.

FACULTY OF APPLIED SCIENCE.

MATRICULATION EXAMINATION.

MATHEMATICS (*First Paper.*)

TUESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

N.B.—It is necessary to pass in each subject. All the work must be shown ; answers alone will not be accepted

ARITHMETIC.

1. Explain the meaning of metre, gramme, litre, and give their equivalents in English measures. Reduce 4 kilometres to miles.

2. Calculate to 3 decimal places the length of the diagonal of a rectangle whose adjacent sides are 43·2 and 27·5 inches respectively.

3. What sum will in 9 mos. amount to $2,500, the rate of interest being 4 per cent. per annum ?

4. At what time after 9 o'clock will the hands of a watch be 20 minutes apart for the first time ?

ALGEBRA.

5. Reduce the fraction $\frac{x^3-3x+2}{x^3+4x^2-5}$ to its lowest terms.

6. Extract the square root of

$$(2x+1)\,(2x+3)\,(2x+5)\,(2x+7)+16.$$

7. If $x=\frac{\sqrt{3}+1}{\sqrt{3}-1}$ and $y=\frac{\sqrt{3}-1}{\sqrt{3}+1}$, show that $x^2+xy+y^2=15$.

8. Solve the equations :

(1) $\frac{x}{x+1}-\frac{3x}{x+2}+2=0,$

(2) $8x+\frac{7}{x}=\frac{65x}{7},$

(3) $\frac{x}{x+1}-\frac{x+1}{x}+\frac{5}{6}=0,$

(4) $\begin{cases} x^2+xy=66, \\ x^2-y^2=11. \end{cases}$

9. The cube root of a certain number is one-fifth of the square-root ; what is the number ?

MATRICULATION EXAMINATION.

MATHEMATICS (*Second Paper.*)

TUESDAY, SEPTEMBER 18TH :—AFTERNOON, 2 TO 5.

GEOMETRY.

1. Parallelograms on equal bases and between the same parallels are equal in area.

2. The rectangle contained by the two parts into which any straight line is divided, together with the square on the line between the point of section and the middle point of the line, is equal to the square on half the line.

(*a*) Where must the point of section be, in order that the rectangle contained by the parts may be as great as possible ?

3. The angle in a semicircle is a right angle.

(*a*) Circles are described on the three sides of an isosceles triangle as diameters ; show that the centre of one of the circles is on the circumference of each of the other two.

4. In a given circle describe a regular pentagon.

5. The straight line which bisects the vertical angle of a triangle divides the base into segments which have the same ratio as the sides.

6. To two given straight lines find (1) a third proportional, and also (2) a mean proportional.

TRIGONOMETRY.

7. Make an angle of 120°. Having drawn the necessary lines, specify the sine and cosine, and calculate their values.

8. State and prove the relation connecting the radius of a circle, the length of an arc, and the radian (circular) measure of the angle which the arc subtends at the centre of the circle.

9. Show that

(1) $\dfrac{\tan^2\theta}{1+\tan^2\theta} = \sin^2\theta,$

(2) $\sin^2\theta \sec^2\theta = \sec^2\theta - 1.$

(3) $\tan^2\theta + \cot^2\theta = \sec^2\theta \operatorname{cosec}^2\theta - 2,$

(4) $$\frac{1-\cos\theta}{1+\cos\theta} = (\operatorname{cosec}\theta - \cot\theta)^2.$$

10. Show that

$$\cos(A+B) = \cos A \cos B - \sin A \sin B,$$

and nence find $\cos 2A$. Also write down (without proof) the value of $\sin 2A$ in terms of $\sin A$ and $\cos A$.

11. Show that

(1) $$\tan 2A = \frac{2\tan A}{1-\tan^2 A},$$

(2) $$\sin 2A = \frac{2\tan A}{1+\tan^2 A}.$$

SECOND YEAR PRIZES.

TUESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiners..... { G. H. CHANDLER, M.A. / R. S. LEA, MA.E.

1. Given the base of a triangle and the difference of the squares on the sides, find the locus of the vertex.

2. Describe a circle of given radius to touch a given circle and a given straight line.

(*a*) If the radius be not given, show that locus of the centre is a parabola.

3. In a given circle to inscribe an isosceles triangle having each of the base angles double of the vertical angle.

4. The volume of a pyramid is one-third of the volume of the prism having the same base and altitude.

5. Find the area of a figure bounded by an arc of a parabola and its chord.

6. Show that

$$1+\frac{1}{2}+\frac{1}{2^2}+\frac{1}{2^3}+\ldots \text{ to } n \text{ terms} = 2 - \frac{1}{2^{n-1}}.$$

7. Solve the equations:

(1) $$\frac{x+2}{x-1} - \frac{4-x}{2x} = \frac{7}{3},$$

(2) $\begin{cases} xy + xy^2 = 12, \\ x + xy^3 = 18, \end{cases}$

(3) $2 \tan x + \sec^2 x = 2,$

(4) $\sin^{-1} 2x + \sin^{-1} x = \frac{1}{2}\pi.$

8. In any plane triangle

(1) $\tan A + \tan B + \tan C = \tan A \tan B \tan C,$

(2) $\tan \frac{1}{2}(A - B) = \dfrac{a - b}{a + b} \cot \frac{1}{2} C.$

9. In any spherical triangle

$$\tan \tfrac{1}{2}(A + B) = \frac{\cos \frac{1}{2}(a - b)}{\cos \frac{1}{2}(a + b)} \cot \tfrac{1}{2} C.$$

10. A mass of 8 lbs. is placed on a smooth horizontal table, and is attached by a string to a mass of 12 lbs. hanging over the table, find the velocity generated in one second and the tension of the string.

11. One pound of lead (*s. g.* 11) is attached by a string to a piece of cork (*s. g.* ·22), and when they are put in water one-half of the cork is immersed, what is the weight of the cork ?

12. Two flexible strings, one of which is horizontal and the other inclined at an angle of 30° to the vertical, support a load of 10 lbs. Find the tension of each string.

EXHIBITION EXAMINATION.

MATHEMATICS.

TUESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiners, ... { G. H. CHANDLER, M.A. / R. S. LEA, MA.E.

1. Find the length of the perpendicular drawn from the point (3, 1) to

(*a*) the line $7x - 2y = 3,$

(*b*) the tangent at the point (2, 6) on the circle

$$(x - 2)^2 + (y - 3)^2 = 9.$$

2. Find the equation of the tangent to the parabola $y^2 = 5x$ which is parallel to the straight line $3x - 2y + 7 = 0.$ Also find the point of contact.

3. In the ellipse and hyperbola tangents at the extremities of diameters are parallel.

4*. Show that

(*a*) $d\left(\frac{1}{a^2 - x^2}\right) = \frac{2x\,dx}{(a^2 - x^2)^2}$,

(*b*) $d\,(x \tan^{-1} x - \frac{1}{2}\log \sqrt{1 + x^2}) = \tan^{-1} x\,dx$,

(*c*) $d \log \tan\left(\frac{\pi}{4} + \frac{x}{2}\right) = \sec x\,dx$.

5. Given $x = r\cos\theta$, $y = r\sin\theta$. show that

$$dx^2 + dy^2 = dr^2 + r^2\,d\theta^2,$$

$$x\,dy - y\,dx = r^2\,d\theta.$$

6. Explain fully a method, involving differentiation, of approximating to the roots of equations, and find an approximate value of a root of the equation

$$x^5 - 12x = 200.$$

7. Given the equation $y = (x - 1)(x - 2)(x - 3)$, determine

(*a*) the general form of the curve which it represents,

(*b*) where it cuts the axes,

(*c*) the point of inflexion,

(*d*) the radius of curvature where $x = 0$.

8*. Find the asymptote of the curve $x^3 + y^3 = a^3$.

9. Determine the relative dimensions of a cylindrical vessel, without top, which has the least surface with a given volume.

10. Integrate (*a*) $\tan\theta\,d\theta$, (*b*) $\sin^3\theta\,d\theta$, (*c*) $\frac{dx}{x}\sqrt{\frac{x + a}{x - a}}$.

11† Given the curve $y^2(a^2 - x^2 = a^4$, or $x = a\sin\theta$, $y = a\sec\theta$, show that

(*a*) the area between the curve and asymptote $x = a$ is πa^2,

(*b*) volume of this about the axis of $y = 4\pi a^3$.

12. Find the moment of inertia of a circular annulus about a normal axis through the centre.

---

* For Third Year only.

† For Fourth Year only.

13. Show that the motion of a simple pendulum is approximately a simple harmonic motion, and hence find the time of a small oscillation.

14†. A chain is wrapped twice round an iron drum; find the coefficient of friction if a pull of 100 pounds just supports 50 tons.

15†. Show that the energy stored up in a train of weight w lbs. and moving with a speed of v miles per hour is $\frac{1}{30} w v^2$ foot-pounds, approximately.

† For Fourth Year only.

FACULTY OF ARTS.

SESSIONAL EXAMINATIONS,

1895.

FACULTY OF ARTS.

SESSIONAL EXAMINATIONS, 1895.

FIRST YEAR.

GREEK.

HOMER:—ODYSSEY XI.
XENOPHON:—HELLENICS I.

TUESDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A., PH.D.
Assistant Examiner,.....JOHN L. DAY, B.A.

(a) "Ὡς ἐφάμην ἡ δ' αὐτίκ' ἀμείβετο πότνια μήτηρ
„ὦ μοι, τέκνον ἐμὸν, περὶ πάντων κάμμορε φωτῶν,
οὔτι σε Περσεφόνεια, Διὸς θυγάτηρ, ἀπαφίσκει,
ἀλλ' αὕτη δίκη ἐστὶ βροτῶν, ὅτε τις κε θάνῃσιν·
οὐ γὰρ ἔτι σάρκας τε καὶ ὀστέα ἶνες ἔχουσιν,
ἀλλὰ τὰ μέν τε πυρὸς κρατερὸν μένος αἰθομένοιο
δαμνᾷ, ἐπεί κε πρῶτα λίπῃ λεύκ' ὀστέα θυμὸς,
ψυχὴ δ' ἠΰτ' ὄνειρος ἀποπταμένη πεπότηται.
ἀλλὰ φόωσδε τάχιστα λιλαίεο· ταῦτα δὲ πάντα
ἴσθ', ἵνα καὶ μετόπισθε τεῇ εἴπῃσθα γυναικί."

(1) *κάμμορε*: what name is given to such forms? (2) *θάνῃσιν*, *λίπῃ*: explain the constructions involved. (3) *δαμνᾷ*: mention the other present forms of this verb. (4) *πεπότηται*: *λιλαίεο*: explain the forms and give the roots. (5) what meanings has *θυμός* in Homer?

2. Translate:

(β) Καὶ μὴν Τάνταλον εἰσεῖδον χαλεπ' ἄλγε' ἔχοντα,
ἑσταότ' ἐν λίμνῃ· ἡ δὲ προσέπλαζε γενείῳ·
στευτο δὲ διψάων, πιέειν δ' οὐκ εἶχεν ἑλέσθαι
ὁσσάκι γὰρ κύψειε' ὁ γέρων πιέειν μενεαίνων,
τοσσάχ' ὕδωρ ἀπολέσκετ' ἀναβροχὲν, ἀμφὶ δὲ ποσσὶν
γαῖα μέλαινα φάνεσκε, καταζήνασκε δὲ δαίμων.
δένδρεα δ' ὑψιπέτηλα κατὰ κρῆθεν χέε καρπὸν,
ὄγχναι καὶ ῥοιαὶ καὶ μηλέαι ἀγλαόκαρποι
συκέαι τε γλυκεραὶ καὶ ἐλαῖαι τηλεθόωσαι·
τῶν ὁπότ' ἰθύσει' ὁ γέρων ἐπὶ χερσὶ μάσασθαι,
τὰς δ' ἄνεμος ῥίπτασκε ποτὶ νέφεα σκιόεντα.

(a) στεῦτο: what meaning and construction has this verb? (b) πιέειν: what infinitive? (c) κύψει', ἰθύσει': explain the constructions (d) τὰς: how is the article used in Homer? (e) With which tenses is the iterative termination σκον found?

3. (1) Scan the first three and the last three verses of ext. (β) (2) Show the value of the Digamma in the Homeric versification. (3) How was the Digamma replaced in later times?

4. (1) Etymology: πότνια, ὀπώρη, πυκινόν, ἀργυρόηλον. (2) Mood and tense of: ἐάγη, ἀναβροχέν, ἐξείλετο, ἔπτατ'. Give principal parts.

5. Explain the syntax of the following:

(i.) βουλοίμην κ' ἐπάρουρος ἐὼν θητευεμεν ἄλλῳ.

(ii.) μὴ τεχνησάμενος μηδ' ἄλλο τι τεχνήσαιτο,
ὅς κεῖνον τελαμῶνα ἑῇ ἐγκάτθετο τέχνῃ

(iii.) εἰπὲ, ἄναξ, πῶς κέν με ἀναγνοιή τὸν ἐόντα;

6. Short notes on : *Ὠκεανός, Ἔρεβος, ἤλυθε καὶ πίεν αἷμα κελαινεφές· αὐτίκα δ' ἔγνω, λᾶας ἀναιδής, Περσεφονεία.*

7. Translate :

Ἐμοὶ μέν, ὦ Μιλήσιοι, ἀνάγκη τοῖς οἴκοι ἄρχουσι πείθεσθαι· ὑμᾶς δὲ ἐγὼ ἀξιῶ προθυμοτάτους εἶναι εἰς τὸν πόλεμον διὰ τὸ οἰκοῦντας ἐν βαρβάροις πλεῖστα κακὰ ἤδη ὑπ' αὐτῶν πεπονθέναι. δεῖ δ' ὑμᾶς ἐξηγεῖσθαί τοῖς ἄλλοις συμμάχοις ὅπως ἄν τάχιστά τε καὶ μάλιστα βλάπτωμεν τοὺς πολεμίους, ἕως ἄν οἱ ἐκ Λακεδαίμονος ἥκωσιν, οὓς ἐγὼ ἔπεμψα χρήματα ἄξοντας, ἐπεί τὰ ἐνθάδε ὑπάρχοντα Λύσανδρος Κύρῳ ἀποδοὺς ὡς περιττὰ ὄντα οἴχεται· Κῦρος δὲ ἐλθόντος ἐμοῦ ἐπ' αὐτὸν ἀεὶ ἀνεβάλλετό μοι διαλεχθῆναι, ἐγὼ δ' ἐπὶ τὰς ἐκείνου θυρας φοιτᾶν οὐκ ἐδυνάμην ἐμαυτὸν πεῖσαι, ὑπισχνοῦμαι δ' ὑμῖν ἀντὶ τῶν συμβάντων ἡμῖν ἀγαθῶν ὑν τῷ χρόνῳ ᾧ ἂν ἐκεῖνα προσδεχώμεθα χάριν ἀξίαν ἀποδώσειν. ἀλλὰ σὺν τοῖς θεοῖς δειξομεν τοῖς βαρβάροις ὅτι καὶ ἄνευ τοῦ ἐκείνους θαυμάζειν δυνάμεθα τοὺς ἐχθροὺς τιμωρεῖσθαι.

(a) ὅπως ἄν..... βλάπτωμεν : explain the construction. *(b)* Account for case of *ἄρχουσι, οἰκοῦντας, ἐλθόντος.* *(c)* Which form of condition in *ἕως ἄν ἥκωσιν*? *(d) ᾧ ἂν ἐκεῖνα* : what force has *ἂν* with relatives ? *(e) χάριν ἀποδώσειν* : give synonyms with their Latin equivalents.

8. Explanatory notes on :

ἀρίστου ὥρα, Ὀλυμπιάς, τρόπαιον στῆσαι.
περιοικοι, βάραθρον, πρυτανεῖς.

9. Translate (at sight) :

"*Τοῦτο δὴ δεῖ λέγειν, πῶς ἂν πορευοίμεθά τε ὡς ἀσφαλέστατα, καὶ εἰ μάχεσθαι δέοι, ὡς κράτιστα μαχοίμεθα.*

πρῶτον μὲν τοίυυν," ἔφη, "δοκεῖ μοι κατακαῦσαι τὰς ἁμάξας, ἃς ἔχομεν, ἵνα μὴ τὰ ζεύγη ἡμῶν στρατηγῇ, ἀλλὰ πορευώμεθα, ὅπη ἂν τῃ στρατιᾷ συμφέρῃ. ἔπειτα καὶ τὰς σκηνὰς συγκατακαῦσαι. αὗται γὰρ αὖ ὄχλον μὲν παρέχουσιν ἄγειν, συνωφελοῦσι δ' οὐδὲν οὔτε εἰς τὸ μάχεσθαι, οὔτ' εἰς τὸ τὰ ἐπιτήδεια ἔχειν. ἔτι δὲ καὶ τῶν ἄλλων σκευῶν τὰ περισσὰ ἀπαλλάξωμεν, πλὴν ὅσα πολέμου ἕνεκεν ἢ σίτων ἢ ποτῶν ἔχομεν, ἵνα ὡς πλεῖστοι μὲν ἡμῶν ἐν τοῖς ὅπλοις ὦσιν, ὡς ἐλάχιστοι δὲ σκευοφορῶσι. κρατουμένων μὲν γὰρ ἐπίστασθε ὅτι πάντα ἀλλότρια· ἢν δὲ κρατῶμεν, καὶ τοὺς πολεμίους δεῖ σκευοφόρους ἡμετέρους νομίζειν. λοιτόν μοι εἶπεῖν, ὅπερ καὶ μέγιστον νομιζω εἶναι. ὁρᾶτε γὰρ καὶ τοὺς πολεμίους, ὅτι οὐ πρόσθεν ἐξενεγκεῖν ἐτόλμησαν πρὸς ἡμᾶς πόλεμον, πρὶν τοὺς στρατηγοὺς ἡμῶν συνέλαβον, νομίζοντες, ὄντων μὲν τῶν ἀρχόντων καὶ ἡμῶν πειθομένων, ἱκανοὺς εἶναι ἡμᾶς περιγενέσθαι τῷ πολέμῳ. λαβόντες δὲ τοὺς ἄρχοντας ἀναρχίᾳ ἂν καὶ ἀταξίᾳ ἐνόμιζον ἡμᾶς ἀπολέσθαι. δεῖ οὖν πολὺ μὲν τοὺς ἄρχοντας ἐπιμελεστέρους γενέσθαι τοῦς νῦν τῶν πρόσθεν, πολὺ δὲ τοὺς ἀρχομένους εὐτακτοτέρους καὶ πειθομένους μᾶλλον τοῖς ἄρχουσι νῦν ἢ πρόσθεν."

INTERMEDIATE EXAMINATIONS.

GREEK..... { PLATO, APOLOGY.
AESCHYLUS, PROMETHEUS VINCTUS.

TUESDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A., PH.D.
Assistant Examiner,.....JOHN L. DAY, B.A.

NOTE.—*Write the answers in separate books marked A and B.*

A.

1. Translate:

(α) Χθονὸς μὲν ἐς τηλουρὸν ἥκομεν πέδον,
Σκύθην ἐς οἶμον, ἄβατον εἰς ἐρημίαν.
Ἥφαιστε, σοὶ δὲ χρὴ μελειν ἐπιστολὰς
ἃς σοι Πατὴρ ἐφεῖτο, τόνδε πρὸς πέτραις
ὑψηλοκρήμνοις τὸν λεωργὸν ὀχμάσαι
ἀδαμαντίνων δεσμῶν ἐν ἀρρήκτοις πέδαις.

(β) τίς ὧδε τλησικάρδιος
θεῶν, ὅτῳ τάδ' ἐπίχαρῆ;
τίς οὐ ξυνασχαλᾷ κακοῖς
τεοῖσι δίχα γε Διός; ὁ δ' ἐπικότως ἀεὶ
τιθέμενος ἄγναμπτον νόον
δάμναται οὐρανιαν
γένναν· οὐδὲ λή ξει, πρὶν ἂν ἢ κορέσῃ κέαρ, ἢ παλάμᾳτινὶ
τὰν δυσάλωτον ἕλῃ τις ἀρχάν.

(γ) τίς γῆ; τί γένος; τίνα φῶ λεύσσειν
τόνδε χαλινοῖς ἐν πετρίνοισιν
χειμαζόμενον; τίνος ἀμπλακίας
ποινὰς ὀλέκει; σήμηνον ὅποι
γῆς ἡ μογερὰ πεπλάνημαι.

(δ) καὶ μὴν ἔργῳ κοὐκ ἔτι μύθῳ
χθὼν σεσάλευται·
βρυχία δ' ἠχὼ παραμυκᾶται
βροντῆς, ἕλικες δ' ἐκλάμπουσι
στεροπῆς ζάπυροι, στρόμβοι δὲ κόνιν
εἰλίσσουσι· σκιρτᾷ γ' ἀνέμων
πνεύματα πάντων εἰς ἄλληλά
στάσιν ἀντίπνουν ἀποδεικνύμενα·
ξυντετάρακται δ' αἰθὴρ πόντῳ.
τοιάδ' ἐπ' ἐμοὶ ῥιπὴ Διόθεν
τεύχουσα φόβον στείχει φανερῶς.
ὦ μητρὸς ἐμῆς σέβας, ὦ πάντων
αἰθὴρ κοινὸν φάος εἱλίσσων,
ἐσορᾷς μ' ὡς ἔκδικα πάσχω.

2. (*a*) ἐφεῖτο (v. 4) : from what present indicative ? (*b*) πρὶν ἄν κορέσῃ (171) : explain the different grammatical constructions with πρίν. (*c*) φῶ (573) : explain form and syntax. (*d*) ποινὰς ὀλέκει : what other readings have been suggested ? Remark on the construction in each case. (*e*) ἀμπλακίας (574) : give the rule for the genitive.

3. (*a*) In *crasis*, how would the following expressions read ?—ὁ ἕτερος, καὶ οἱ, ἐγὼ οἶδα, τὸ αὐτό. Resolve χαὔτη, οὐκ. (*b*) When can δέ stand third or fourth word in a sentence ? (*c*) ἀλευ' ἅ δᾶ : translate and explain each form. (*d*) ἀσμένῳ δέ σοι ἡ ποικιλείμων νὺξ ἀποκρύψει φάος. Can you quote an instance of this Grecism from the 21st Book of Livy ?

4. (*a*) Give the meaning and derivation of οἶμον, ἄρρηκτος, ζάπυροι, ἄπυρος, ἄυπνος, νηλής, χειρωναξία, ἀιστοῖ, σεπτόν. (*b*) Distinguish πέδαι and δέσμα : ἆθλος and ἆθλον.

5. Name and describe the metres in which the lines of extracts (*a*) and (*γ*) are composed. Scan lines 2, 6, 165, 577, 1101, and 1102, remarking on any peculiarities.

6. (*a*) *πέδαρσιοι*: in what way does this word describe the Scythians? (*b*) Where are the Chalybes, Amazons, Arimaspi, and Gorgons placed by Aeschylus? Where does the poet imagine the Caucasus to lie? (*c*) What derivation does the poet assign to *βόσπο-ρος* and *Ἰόνιος*? Are these false etymologies? (*d*) *ποταμὸς Αἰθίοψ*: what river is meant?

B.

7. Translate:

Ἆρ' οὖν ἄν με οἴεσθε τοσάδε ἔτη διαγενέσθαι, εἰ ἔπραττον τὰ δημόσια καὶ πράττων ἀξίως ἀνδρὸς ἀγαθοῦ ἐβοήθουν τοῖς δικαίοις καί, ὥσπερ χρή, τοῦτο περὶ πλείστου ἐποιούμην; πολλοὺ γε δεῖ, ὦ ἄνδρες Ἀθηναῖοι· οὐδὲ γὰρ ἂν ἄλλος ἀνθρώπων οὐδεις. ἀλλ' ἐγὼ διὰ παντὸς τοῦ βίου δημοσίᾳ τε, εἴ πού τι ἔπραξα, τοιοῦτος φανοῦμαι, καὶ ἰδίᾳ ὁ αὐτὸς, οὐδενὶ πώποτε ξυγχωρήσας οὐδὲν παρὰ τὸ δίκαιον οὔτε ἄλλῳ οὔτε τούτων οὐδενί, οὓς οἱ διαβάλλοντες ἐμέ φασιν ἐμοὺς μαθητὰς εἶναι. ἐγὼ δὲ διδάσκαλος μὲν οὐδενὸς πώποτ' ἐγενόμην· εἰ δέ τίς μου λέγοντος καὶ τὰ ἐμαυτοῦ πράττοντος ἐπιθυμεῖ ἀκούειν, εἴτε νεώτερος εἴτε πρεσβύτερος, οὐδενὶ πώποτε ἐφθόνησα, οὐδὲ χρήματα μὲν λαμβάνων διαλέγομαι, μὴ λαμβάνων δὲ οὔ, ἀλλ' ὁμοίως καὶ πλουσίῳ καὶ πένητι παρέχω ἐμαυτὸν ἐρωτᾶν, καὶ ἐάν τις βούληται ἀποκρινόμενος ἀκούειν ὧν ἂν λέγω. καὶ τούτων ἐγὼ εἴτε τις χρηστὸς γίγνεται εἴτε μή, οὐκ ἂν δικαίως τὴν αἰτίαν ὑπέχοιμι, ὧν μήτε ὑπεσχόμην μηδενὶ μηδὲν πώποτε μάθημα μήτε ἐδίδαξα. εἰ δέ τίς φησι παρ' ἐμοῦ πώποτέ τι μαθεῖν ἢ ἀκοῦσαι ἰδίᾳ ὅ τι μὴ καὶ ἄλλοι πάντες εὖ ἴστε ὅτι οὐκ ἀληθῆ λέγει.

8. *πολλοῦ γε δεῖ*: what genitive? Supply the ellipsis after *οὐδείς* in line 5, and after *οὗ* in line 13. Explain the the various uses of *ἀν* in the above passage. Distinguish *πράττω* and *ποιέω*. Which form of condition in the last sentence? *λαμβάνων* (line 13): to what is the participle here equivalent? What constructions follow *ἐδίδαξα* and *ἀκοῦσαι*?

9. Explain the following constructions:

(i.) *μή πως ἐγὼ ὑπὸ Μελήτου τοσαύτας δίκας φύγοιμι.*

(ii.) *πολλὴ γὰρ ἄν τις εὐδαιμονία εἴη περὶ τοὺς νέους εἰ εἷς μὲν μόνος αὐτοὺς διαφθείρει, οἱ δ' ἄλλοι ὠφελοῦσι.*

(iii.) *ταῦτα καὶ νεωτέρῳ καὶ πρεσβυτέρῳ, ὅτῳ ἄν ἐντυγχάνω, ποιήσω.*

(iv.) *εἰ τριάκοντα μόναι μετέπεσον ποῦ ψήφων ἀποπεφεύγη ἄν.*

10. Distinguish the synonyms of *πενής* and of *τεκμήριον*. What is meant by prolepsis? Illustrate. How much was *μνᾶν ἀργυρίου*? In what play was Socrates held up to ridicule? When was it produced? Explain the terms *ἀντωμοσία, ἀνάκρισις, ἀγων τιμητός*. Comment on the expression *νὴ τὸν κύνα*. What views did Socrates entertain of the future state?

SESSIONAL EXAMINATIONS, 1895.

THIRD YEAR.

TUESDAY, APRIL 3RD:—MORNING, 9 TO 12.

GREEK.—EURIPIDES.—MEDEA.

Examiner,..... .....REV. GEORGE CORNISH, M.A., LL.D.

1. Translate:—

(A) (Give as accurately as you can the import of the particles in this ext.).

ΑΙ. Τί γὰρ σὸν ὄμμα χρώς τε συντέτηχ' ὅδε;
ΜΗ. Αἰγεῦ, κάκιστος ἔστι μοι πάντων πόσις.
ΑΙ. τί φῄς; σαφῶς μοι σὰς φράσον δυσθυμίας.
ΜΗ. ἀδικεῖ μ' Ἰάσων οὐδὲν ἐξ ἐμοῦ παθών·
ΑΙ. τί χρῆμα δράσας; φράζε μοι σαφέστερον.
ΜΗ. γυναῖκ' ἐφ' ἡμῖν δεσπότιν δόμων ἔχει.
ΑΙ. ἦ γὰρ τετόλμηκ' ἔργον αἴσχιστον τόδε;
ΜΗ. σάφ' ἴσθ'· ἄτιμοι δ' ἐσμὲν οἱ πρὸ τοῦ φίλοι.
ΑΙ. πότερον ἐρασθεὶς ἢ σὸν ἐχθαίρων λέχος;
ΜΗ. μέγαν γ' ἔρωτα· πιστὸς οὐκ ἔφυ φίλοις.
ΑΙ. ἴτω νυν, εἴπερ ὡς λέγεις ἐστὶν κακός.
ΜΗ. ἀνδρῶν τυράννων κῆδος ἠράσθη λαβεῖν·
ΑΙ. δίδωσι δ' αὐτῷ τίς; πέραινέ μοι λόγον.
ΜΗ. Κρέων, ὃς ἄρχει τῆσδε γῆς Κορινθίας·
ΑΙ. ξυγγνωστὰ μὲν γὰρ ἦν σε λυπεῖσθαι, γύναι.
ΜΗ. ὄλωλα· καὶ πρός γ' ἐξελαύνομαι χθονός.
ΑΙ. πρὸς τοῦ; τόδ' ἄλλο καινὸν αὖ λέγεις κακον.
ΜΗ. Κρέων μ' ἐλαύνει φυγάδα γῆς Κορινθίας.
ΑΙ. ἐᾷ δ' Ἰάσων; οὐδὲ ταῦτ' ἐπήνεσα.

(B) ΙΑΣ. ὦ μῖσος, ὦ μέγιστον ἐχθίστη γύναι
θεοῖς τε κἀμοὶ παντί τ' ἀνθρώπων γένει,
ἥτις τέκνοισι σοῖσιν ἐμβαλεῖν ξίφος

ἐτλης τεκοῦσα, κἄμ' ἄπαιδ' ἀπώλεσας·
καὶ ταῦτα δράσασ' ἡλιόν τε προσβλέπεις
καὶ γαῖαν, ἔργον τλᾶσα δυσσεβέστατον.
ὀλοί'· ἐγὼ δὲ νῦν φρονῶ, τότ' οὐ φρονῶν,
ὅτ' ἐκ δόμων σε βαρβάρου τ' ἀπὸ χθονὸς
Ἕλλην' ἐς οἶκον ἠγόμην, κακὸν μέγα,
πατρός τε καὶ γῆς προδότιν ἥ σ' ἐθρέψατο·
τὸν σὸν δ' ἀλάστορ' εἰς ἔμ' ἔσκηψαν θεοί·
κτανοῦσα γὰρ δὴ σὸν κάσιν παρέστιον,
τὸ καλλίπρωρον εἰσέβης Ἀργοῦς σκάφος.
ἤρξω μὲν ἐκ τοιῶνδε, νυμφευθεῖσα δὲ
παρ' ἀνδρὶ τῷδε καὶ τεκοῦσά μοι τέκνα,
εὐνῆς ἕκατι καί λέχους σφ' ἀπώλεσας.
οὐκ ἔστιν ἥτις τοῦτ' ἂν Ἕλληνις γυνὴ
ἔτλη ποθ', ὧν γε πρόσθεν ἠξίουν ἐγὼ
γῆμαί σε, κῆδος ἐχρὸν ὀλέθριόν τ' ἐμοί,
λέαιναν, οὐ γυναῖκα.

2. (*a*) In ext. (A).—(1) *ἄτιμοι * * φίλοι* ;—explain this use of the *Mas. Plu.* (2) *μέγαν ἔρωτα* :—What *Acc.*? (3) *ἔφυ* :—What tense? How do you explain the use here? (4) *ἐπήνεσα* :—What use of the *Aor.*? (*b*) In ext. (B).—*μέγιστον ἐθίστη* : How are the *Superlatives* used? (2) *νῦν φρονῶ* :—What depends on this? (3) *εὐνῆς—λέχους* :—Derive and distinguish. (3) *κῆδος* :—Explain the meaning and express it in Latin.

3. Translate the following extt., adding an explanatory note where you see fit, and giving the name of the speaker in each extt.:—

(*a*) *προδοὺς γὰρ αὐτοῦ τεκνα δεσπότιν τ' ἐμὴν*
γάμοις Ἰάσων βασιλικοῖς εὐνάζεται,
γήμας Κρέοντος παῖδ', ὃς αἰσυμνᾷ χθονός.

(*b*) γυνὴ γαρ τἄλλα μὲν φόβου πλέα
κακη δ' ἐς ἀλκὴν καὶ σίδηρον εἴσορᾶν
ὅταν δ' ἐς εὐνὴν ἠδικημένη κυρῇ,
οὐκ ἔστιν ἄλλη φρὴν μιαιφονωτέρα.

(*c*) τάχ' ἐξ ὀπαδῶν χειρὸς ὠσθήσει βίᾳ.

(*d*) ἐπείπερ ἡμῖν τόνδ' ἐκοίνωσας λόγον,
σέ τ' ὠφελεῖν θέλουσα καὶ νόμοις βροτῶν
ξυλλαμβάνουσα δρᾶν σ' ἀπεννέπω τάδε

4. Write short explanatory notes (grammatical) on the following usages:—(1) ἤσθετ' ἠδικημένη. (2) ἀτιμάσας ἔχει. (3) μή τι βουλεύσῃ—βουλεύῃ—νέον. (4) κοὐ πόνων κεχρήμεθα—ξυμφορᾷ κεφρημένους. (5) πρόθυμος μᾶλλον ἢ σοφωτέρα. (6) πρὸς ἰσχύος χάριν.

5. Parse the following words:—τοῦ, πεσεῖν, ἤπατος, κέκρανται, ἄζυγες, ἀναλοῖς, του, σφ', ἐλᾶν, τεύξει, ἀνέπται, δεδόκησαι.

6. Explain the meaning of the following:—(1) πεσσοὺς προσελθών. (2) κυανέας Συμπληγάδας. (3) ἀμφιπύλου μελάθρου. (4) πέμπειν ξυμβολά. (5) πομπαῖος ἄνα. (6) τένοντ' ἐς ὀρθὸν ὄμμασιν σκοπουμένη. (7) ἐγγὺς ἀρκύων ξίφους. (8) πρὸς βαλβῖδα βίου.

7. (*a*) Conjugate the *Imperf. Ind.* of εἶμι and εἰμί. (*b*) Translate οὐ φθονεῖ φράσαι, and μὴ φθόνει φράσαι. οὐ γὰρ ἂν δέσποιν' ἐμὴ Μήδεια πύργους γῆς ἔπλευσ' Ἰωλκίας, and the same omitting the particle ἄν. (*c*) ζῆν,—for what contracted? Give other Greek verbs that contract in this manner.

8. Write down the scheme (1) of the Iambic Trimeter Acatalectic; and (2) of the Anapaestic Dimeter Acatalectic, indicating the isochronous feet. Scan the last three verses of ext. (A).

SESSIONAL EXAMINATIONS.

FIRST YEAR.

LATIN.

SALLUST: *de Catilinae coniuratione.*

VIRGIL: *Aeneid VI.*

CICERO: *de Amicitia.*

WEDNESDAY, APRIL 3RD:—9 TO 12 A.M.

Examiner,..... A. JUDSON EATON, PH.D.

Assistant-Examiner,..... JOHN L. DAY, B.A.

Note.—Answers to (*A*) and (*B*) to be written on separate sets of papers.

(A)

I. Translate:

(*a*)

Maria aspera iuro,
Non ullum pro me tantum cepisse timorem,
Quam tua ne, spoliata armis, excussa magistro,
Deficeret tantis navis surgentibus undis.
Tris notus hibernas inmensa per aequora noctis
Vexit me violentus aqua; vix lumine quarto
Prospexi Italiam summa sublimis ab unda.
Paullatim adnabam terrae: iam tuta tenebam,
Ni gens crudelis madida cum veste gravatum,
Prensantemque uncis manibus capita aspera montis,
Ferro invasisset, praedamque ignara putasset.
Nunc me fluctus habet, versantque in litore venti.

(1) Explain construction of *armis*, *deficeret*, *lumine*, *terrae*. (2) *iam tuta tenebam*: what is the real explanation of such constructions as this? (3) *paullatim*: explain the formation of this and similar adverbs. (4) Derive *sublimis*.

II. Translate:

(*b*) Quisque suos, patimur, Manis; exinde per amplum
Mittimur Elysium, et pauci laeta arva tenemus:
Donec longa dies, perfecto temporis orbe,
Concretam exemit labem, purumque reliquit
Aetherium sensum, atque aurai simplicis ignem.
Has omnis, ubi mille rotam volvere per annos,
Lethaeum ad fluvium deus evocat agmine magno:
Scilicet immemores, supera ut convexa revisant
Rursus, et incipiant in corpora velle reverti.

(1) Discuss the relation of the passage *exinde per amplum*.....arva *tenemus* to the context. (2) Explain the construction of *orbe, exemit, revisant, reverti.* (3) Derive *silicet.* (4) *aurai:* mention other archaic forms found in Virgil.

III. The main points in the construction of the following:

(i)
Quis protinus omnia
Perligerent oculis, in iam praemissus Achates
Adforet.

(ii)
Tu quoque magnam
Partem opere in tanto, sineret dolor, Icare, haberes.

(iii) Nunc grege de intacto septem mactare iuvencos
Praestiterit.

(iv) Non, mihi si linguae centum sint oraque centum,
Ferrea vox, omnes scelerum comprendere formas,
Omnia poenarum percurrere nomina possim.

IV. (*a*) Illustrate the meaning of: hendiadys, constructio ad sensum, optative subjunctive.

(*b*) Describe Charon, quoting where possible.

V. (1) What evidence is there in Aeneid VI that Virgil held the Pythagorean doctrine of metempsychosis? *Briefly* explain it.

(2) Short notes on: domos Ditis: matri Eumeridum: quaesitor Minos: Titania astra.

VI. Translate:

Sed ubi ille assedit, Catilina, ut erat paratus ad dissimulanda omnia, demisso voltu, voce supplici postulare, patres conscripti ne quid de se temere crederent; ea familia ortum, ita ab adulescentia vitam instituisse, ut omnia bona in spe haberet; ne existumarent sibi patricio homini, cuius ipsius atque maiorum pluruma beneficia in populum Romanum essent, perdita re publica opus esse, cum eam servaret M. Tullius inquilinus civis urbis Romae. Ad hoc maledicta alia cum adderet, obstrepere omnes, hostem atque parricidam vocare. Tum ille furibundus: "quoniam quidem circumventus," inquit, "ab inimicis praeceps agor, incendium meum ruina restinguam."

(*a*) *Postulare:* What infinitive? (*b*) Account for cas[illegible] *voltu, familia, re.* (*c*) The construction of *ortum, haberet, esse, adderet.*

VII. Short notes on: censores, quaestor pro praetore, Massilia, pontifices bellum maritumum, the magistrates with imperium.

(B)

VIII. Write on the following topics, illustrating by examples:

(*a*) Partitive Genitive with Adverbs of Place.

(*b*) The Passive of Intransitive Verbs.

(*c*) Construction with *tantum abest.*

IX. Translate into Latin:

(1) I do this, not because it is pleasant, but because it is right. (2) I do not wonder that Tarquinius Superbus, considering his notorious haughtiness, perversity and headstrong wilfulness, found himself destitute of friends when he was overthrown and banished from Rome. (3) Is it on account of want and weakness that we feel the need of friendship? (4) In his essay on old age, Cato, the oldest and wisest man of Rome, is introduced to carry on the discussion. (5) Let this be established as our law, that we never swerve from the straight course and path of virtue.

X. Translate (at sight):

CATO'S VIEWS OF OLD AGE.

CATO. Faciam ut potero, Laeli. Saepe enim interfui querellis aequalium—pares autem, vetere proverbio, cum paribus facillime congregantur—quae C. Salinator, quae Sp. Albinus, homines consulares nostri fere aequales deplorare solebant, tum quod voluptatibus carerent, sine quibus vitam nullam putarent, tum quod spernerentur ab iis a quibus essent coli soliti. Qui mihi non id videbantur accusare quod esset accusandum. Nam si id culpa senectutis accideret, eadem mihi usu venirent reliquisque omnibus maioribus natu, quorum ego multorum cognovi senectutem sine querella, qui se et libidinum vinculis laxatos esse non moleste ferrent, nec a suis despicerentur. Sed omnium istius modi querellarum in moribus est culpa, non in aetate. Moderati enim et nec difficiles nec inhumani senes tolerabilem senectutem agunt; importunitas autem et inhumanitas omni aetati molesta est.

SESSIONAL EXAMINATIONS.

FIRST YEAR.

ROMAN HISTORY AND LITERATURE.

History: Myer's *History of Rome.*

Literature: Bender's *Roman Literature.*

WEDNESDAY, APRIL 3RD:—2 TO 5 P.M.

Examiner,.....A. JUDSON EATON, PH.D.

Assistant Examiner,.....JOHN L. DAY, B.A.

(Write groups I and II on separate sets of papers.)

I.

1. The constitution of Servius Tullius.

2. The war with Pyrrhus.

3. Describe the battle of Metaurus.

4. The Third Punic War.

5. In what connection do these names occur in history: Seneca, Justinian, Verres, Theodosius, Agrippina, Jugurtha, Crassus?

6. A list of the Emperors from Augustus to Marcus Aurelius, with the dates of their reigns.

7. The reforms of Diocletian.

8. The extent of the Roman empire:—

(*a*) At the beginning of the second Punic war.

(*b*) At the end of the Mithridatic war.

(*c*) At the death of Augustus.

(*d*) Under Trojan.

9. Short notes on any four of the following:—(*a*) The Sacred Colleges: (*b*) The XII Tables; (*c*) Comitia Curiata; (*d*) Colosseum; (*e*) The Roman water system; (*f*) The writers of the early Latin church.

10. Assign important events to these dates:—B.C. 494, 444, 390, 367, 260, 216, 202, 197, 48, 31; A.D. 325, 410, 451, 476.

II.

11. Name, with dates, the periods of Roman liter ture, as distinguished by Bender.

12. Write a short life of Virgil.

13. What was Virgil's main object in writing the "Aeneid"? What are the finest parts of this poem?

14. Draw a comparison between Horace and Virgil.

15. Give a survey of Cicero's life and writings.

16. At what time did Sallust live? What is Martial's judgment of Sallust?

INTERMEDIATE EXAMINATIONS.

LATIN. { LIVY, BOOK XXI.
HORACE, EPISTLES, BOOK I., 1-6.

WEDNESDAY, APRIL 3RD:—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, PH.D.
Assistant Examiner,.....JOHN L. DAY, B.A.

(Write the answers to A and B on separate sets of papers.)

A.—LIVY, Bk. XXI.

1. Translate:

(*a*) Abundabat multitudine hominum Poenus; (ad centum quinquaginta milia habuisse in armis satis creditur;) oppidani ad omnia tuenda atque obeunda multifariam distineri coepti sunt; non sufficiebant itaque. Iam feriebantur arietibus muri quassataeque multae partes erant; una continentibus ruinis nudaverat urbem; tres deinceps turres, quantumque inter eas muri erat, cum fragore ingenti prociderunt. Captum oppidum ea ruina crediderant Poeni, qua, velut si pariter utrosque murus texisset, ita utrinque in pugnam procursum est.

(*b*) Ut re ita gesta ad utrumque ducem sui redierunt, nec Scipioni stare sententia poterat, nisi ut ex consiliis coeptisque hostis et ipse conatus caperet, et Hannibalem incertum, utrum coeptum in Italiam intenderet iter an cum eo, qui primus se obtulisset Romanus exercitus, manus consereret, avertit a praesenti certamine Boiorum legatorum regulique Magali adventus qui se duces itinerum, socios periculi fore affirmantes integro bello, nusquam ante libatis viribus Italiam aggrediendam censent.

(*c*) Servis quoque dominos prosecutis libertatem proponit, binaque pro iis mancipia dominis se redditurum. Eaque ut rata scirent fore, agnum laeva manu, dextera silicem retinens, si falleret, Iovem ceterosque precatus deos, ita se mactarent, quemadmodum ipse agnum mactasset, secundum precationem caput pecudis saxo elisit. Tum vero omnes, velut

diis auctoribus in spem suam quisque acceptis, id morae, quod nondum pugnarent, ad potienda sperata rati, proelium uno animo et voce una poscunt.

2. Ext. (*a*).—(1) *coepti sunt:* Why is the passive form employed? (2) Give the principal parts of *prociderunt, texisset, feriebantur, elisit.* Ext. (*b*).—(3) What is *Hypallage?* Note an instance of it in this extract. Remark on the general construction of this sentence. Ext. (*c*).—(4) Distinguish between *servus* and *mancipium, pecus* (*pec oris*) and *pecus* (*pecudis*). (5) Account for the *tense* and *mood* of *rata fore, falleret, mactarent, mactassent.* (6) Remark on the construction *ad potienda sperata.*

3. Translate, and explain construction of *italicized* words:

(*a*) nullo repugnante captas naves *Messanam in portum* deduxerunt.

(*b*) Et rex regiaque classis una *profecti.*

(*c*) Inde post paucos dies *reditum* Lilybaeum, captivique *a consule* sub corona *venierunt.*

(*d*) *Quartis* castris ad Insulam pervenit.

(*e*) *victi amplius ducenti* ceciderunt.

(*f*) duo milia *peditum* et mille *equites.*

(*g*) Id tempus, quod *gerendis rebus* superesset, quieti datum.

(*h*) Urbem *vobis,* quam magna parte *dirutam habet,* adimit, agros relinquit, locum *assignaturus,* in quo novum oppidum œdificetis.

4. (*a*) Illustrate some of the peculiarities of Livy's style. (*b*) Draw a map to illustrate the battle of the Trebia, marking the position of the neighboring towns and rivers, and showing the position of the armies. (*c*) Define and illustrate *Chiasmus, Anaphora, Litotes.*

5. (*a*) Change the following sentences into Indirect Discourse:—

Non vereor, ne quis me haec vestri adhortandi causa magnifice loqui existimet, ipsum aliter animo affectum esse. Licuit in Hispaniam, provinciam meam, quo iam profectus eram, cum exercitu ire meo, ubi fratrem consilii participem ac periculi socium haberem, tamen, cum praeterveherer navibus Galliae oram, ad famam huius hostis in terram egressus, praemisso equitatu, ad Rhodanum movi castra.

(*b*) Describe the periodic construction. Quote an example, or select one from the above extracts.

B.—Horace, Epistles, Bk. I.

6. Translate:

(*a*) Prima *dicte* mihi, *summa* dicende *Camena,*
spectatum satis et donatum iam *rude* quaeris,
Maecenas, iterum *antiquo* me *includere* ludo.
Non eadem est aetas, non *mens.*

(*b*) Mancipiis locuples eget *aeris* Cappadocum rex.
Ne fueris *hic* tu. *Chlamydes Lucullus*, ut aiunt,
Si posset centum scaenae praebere rogatus,
'Qui possum tot?' ait, 'Tamen et quaeram et quot habebo
mittam.' Post paullo scribit sibi milia quinque
esse domi chlamydum; partem vel *tolleret* omnes.

(*c*) *Albi*, nostrorum sermonum candide iudex,
quid nunc te dicam facere in regione Pedana?
Scribere quod Cassi Parmensis opuscula vincat,
an tacitum silvas inter reptare salubris,
curantem quicquid dignum sapiente bonoque est?
Non tu corpus *eras* sine pectore; di tibi formam,
di tibi divitias dederunt artemque fruendi.

7. (*a*) Write notes, grammatical or explanatory, on words italicized in the above extracts. (*b*) Scan the last two lines of extracts (*a*) and (*c*).

8. (*a*) Derive: delirant, fomenta, macrescit, sollemnia, depromere, mitescere, sodes. (*b*) Explain the following allusions: domitor Troiae: Sirenum voces: Roscia lex: porticus Agrippae: Caerite cera digni.

9. Carefully translate and comment:

Quod si

(*a*) frigida curarum fomenta relinquere posses,
quo te caelestis sapientia duceres, ires.

(*b*) Quo mihi fortunam, si non conceditur uti?

(*c*) Quid censes munera terrae
quid maris extremos Arabas ditantis et Indos
ludicra quid plausus et amici dona Quiritis
quo spectanda modo, quo sensu credis et ore?

(*d*) Est animus tibi, sunt mores, est lingua fides que,
sed quadringentis sex septem milia desunt:
plebs eris.

10. (*a*) Where was Horace born? Give the dates of his birth and death. (*b*) What subjects are treated of in his epistles? Give an outline of the thought of the sixth epistle.

INTERMEDIATE EXAMINATIONS.

LATIN COMPOSITION AND TRANSLATION AT SIGHT.

WEDNESDAY, APRIL 3RD: —AFTERNOON, 2 TO 4.

Examiner,.....A. JUDSON EATON, PH.D.

I.

In the consulship of Publius Scipio and Tiberius Longus, 219 B.C., the senate voted to send ambassadors to investigate the condition of their allies in Spain, and, if they thought it worth while, to submit the resolution of the senate to Hannibal, and warn him to keep his hands off Saguntum. But when, sooner than anyone expected, news came of the fall of Saguntum, the fathers were seized with sorrow for the loss of their allies and with shame for having neglected them. They saw at once that they would have to wage war soon before the very walls of Rome. And they had reason to be afraid, for the Carthaginians were an army of veterans, whose arms had been exercised in a most severe campaign of twenty-three years, and always victorious. The Roman Army, on the other hand, had never been so unfit for war as now.

II.

Cum eae res maxime agerentur, nova clades nuntiata—aliam super aliam cumulante in eum annum fortuna—L. Postumium consulem designatum in Gallia ipsum atque exercitum deletos. Silva erat vasta—Litanam Galli vocabant—qua exercitum traducturus erat. Eius silvae dextra laevaque circa viam Galli arbores ita inciderunt ut immotae starent, momento levi impulsae occiderent. Legiones duas Romanas habebat Postumius sociumque ab supero mari tantum conscripserat, ut viginti quinque milia armatorum in agros hostium induxerit. Galli oram extremae silvae cum circumsedissent, ubi intravit agmen saltum, tum extremas arborum succisarum impellunt: quae alia in aliam instabilem per se ac male haerentem incidentes ancipiti strage arma viros equos obruerunt, ut vix decem homines effugerent. Nam cum exanimati plerique essent arborum truncis fragmentisque ramorum, ceteram multitudinem inopinato malo trepidam Galli saltum omnem armati circumsedentes interfecerunt, paucis e tanto numero captis qui pontem fluminis petentes—obsesso ante ab hostibus ponte—interclusi sunt. Ibi Postumius omni vi, ne caperetur, dimicans occubuit: spolia corporis caputque praecisum ducis Boii ovantes templo, quod sanctissimum est apud eos, intulere: purgato inde capite, ut mos eis est, calvam auro caelavere, idque sacrum vas eis erat, quo sollemnibus libarent poculumque idem sacerdoti esset ac templi antistitibus. Praeda quoque haud minor Gallis quam victoria fuit: nam etsi magna pars animalium strage silvae oppressa erat, tamen ceterae res, quia nihil dissipatum fuga est, stratae per omnem iacentis agminis ordinem inventae sunt.

THIRD YEAR.

LATIN.—Juvenal, Satires, I.-X.

Wednesday, Dec. 19th:—9 to 12 a.m.

Examiner,.....A. Judson Eaton, Ph.D

1. Translate, and comment on words or phrases italicized:

(*a*) Atque utinam his potius nugis tota illa dedisset
Tempora saevitiae, claras quibus abstulit urbi
Illustresque animas impune et vindice nullo!
Sed periit, postquam cerdonibus esse timendus
Coeperat: hoc nocuit Lamiarum caede madenti.

(*b*) Haec satis ad iuvenem, quem nobis fama superbum
Tradit et inflatum plenumque Nerone propinquo:
Rarus enim *ferme sensus communis* in illa
Fortuna. Sed te censeri *laude* tuorum,
Pontice, *noluerim* sic, ut nihil ipse futurae
Laudis agas. Miserum est aliorum incumbere famae,
Ne collapsa ruant subductis tecta columnis.
Stratus humi palmes viduas desiderat ulmos.

(*c*) Defensor culpae dicet mihi, "Fecimus et nos
Haec iuvenes." Esto. *Desisti* nempe, nec ultra
Fovisti errorem. Brevi sit, quod turpiter audes;
Quaedam cum prima resecentur crimina barba;
Indulge veniam pueris: *Lateranus* ad illos
Thermarum calices *inscriptaque lintea* vadit,
Maturus bello, Armeniae Syriaeque tuendis
Amnibus et Rheno atque Istro. Praestare Neronem
Securum valet haec aetas. *Mitte Ostia*, Caesar,
Mitte: sed in magna legatum quaere popina.

(*d*) *Libera* si dentur populo suffragia, quis tam
Perditus, ut dubitet *Senecam* praeferre Neroni
Cuius supplicio non debuit una parari
Simia, nec serpens unus, nec culeus unus?
Par Agamemnonidae crimen; sed causa facit rem
Dissimilem.

(*e*) Unus *Pellaeo* iuveni non sufficit orbis;
Aestuat infelix angusto limite mundi,
Ut *Gyari* clausus scopulis parvaque Seripho:
Cum tamen *a figulis munitam* intraverit urbem,
Sarcophago contentus erit. Mors sola fatetur,

Quantula sint hominum corpuscula. Creditur olim
Velificatus Athos, et quidquid Graecia mendax
Audet in historia : constratum classibus isdem
Suppositumque rotis solidum mare : credimus altos
Defecisse amnes *epotaque* flumina, Medo
Prandente, et *madidis* cantat quae Sostratus *alis*.

2. Write explanatory notes on :

(*a*) assiduo ruptae lectore columnae. (*b*) Venusina digna lucerna. (*c*) bulla. (*d*) purpura maior. (*e*) sportula. (*f*) iam quartanam sperantibus aegris. (*h*) Tarpeia fulmina. (*i*) Lares. (*k*) Serrana aulaea. (*l*) parens et pater patriae. (*m*) molesta tunica. (*n*) ludus gladiatorius.

3. (*a*) Of whom were the lines in 1 (*a*) spoken ? Explain their relation to the context. From what satire are they taken ? (*b*) Give briefly the arguments of Satires I. and III.

SESSIONAL EXAMINATIONS.

THIRD YEAR.

LATIN.— { Pliny, Select Letters.
Juvenal, Satires, VIII. and XIII.

WEDNESDAY, APRIL 3RD :—MORNING, 9 TO 12.

Examiner..... A. JUDSON EATON, PH.D.

1. Translate :

Stupet haec, qui iam post terga reliquit
Sexaginta annos, Fonteio consule natus.
An nihil in melius tot rerum proficis usu ?
Magna quidem sacris quae dat praecepta libellis
victrix fortunae sapientia : ducimus autem
nos quoque felices, qui ferre incommoda vitae,
Neciactare iugum, vita didicere magistra.

2. (*a*) *Fonteio consule natus* : these words conclusively fix the date of this satire. Explain. (*b*) What is the subject of *stupet ?* (*c*) Cite various readings in line 3. (*d*) Give two possible interpretations of *Magna..... sapientia*. (*e*) Remark on the general sense of this passage, and connection in thought with the context.

3. Translate :

Sed si cuncta vides simili fora plena querela,
si decies lectis diversa in parte tabellis,
vana supervacui dicunt chirographa ligni,
arguit ipsorum quos litera gemmaque princeps

sardonychus, loculis quae custoditur eburnis :
ten', o delicias ! extra communia censes
ponendum, quia tu gallinae filius albae,
nos viles pulli, nati infelicibus ovis ?

4. (*a*) Give interpretations of line 2. (*b*) Give derivation of *chirographa* v. 3), *caelicolarum*, *examen*, *arcana*, *delubra*, *sinciput*.

5. Translate and comment on the following :

(*a*) Ut sit magna, tamen certe lenta ira Deorum est.

(*b*) Accipe quae contra valeat solacia ferre,
Et qui nec Cynicos, nec Stoica dogmata legit
A Cynicis tunica distantia, non Epicurum
Suspicit exigui laetum plantaribus horti.

(*c*) Ad subitas Thracum volucres nubemque sonoram
Pygmaeus parvis currit bellator in armis :
Mox impar hosti raptusque per aera curvis
Unguibus a salva fertur grue.
Scan the last two lines.

6. Translate and comment on words *italicized* :—

(*a*) Quo magis te, cui vacat, hortor, cum in urbem proxime veneris (*venias* autem ob hoc maturius), illi te expoliendum limandumque permittas. Neque enim ego, ut multi, invideo *aliis bono quo* ipse careo, sed contra *sensum quendam voluptatemque* percipio si ea quae mihi denegantur amicis video, superesse.

(*b*) Qui negabant esse se Christianos aut fuisse, cum praecunte me deos appellarent et *imagini* tuae, quam propter hoc iusseram cum simulacris numinum adferri, ture ac vino supplicarent, praeterea male dicerent *Christo*, quorum *nihil* posse cogi dicuntur qui sunt re vera Christiani, dimittendos esse putavi.

(*c*) Lucubrare *Vulcanibus* incipiebat, non auspicandi causa, sed studendi, *statim a nocte* multa, hieme vero ab hora septima, vel cum tardissime, octava, saepe sexta. Erat sane *somni paratissimi*, non numquam etiam inter ipsa studia *instantis*, et descrentis.

C. PLINIUS SEPTICIO SUO S. P.

Heus tu promittus ad cenam nec venis ! Dicitur ius : ad assem inpendium reddes, nec id modicum. Paratae erant *lactucae* singulae, ova bina, *alica* cum *mulso* et nive (nam hanc quoque computabis, immo hanc in primis, quae perit in ferculo), betacei, alia mille non minus lauta. *Audisses* comœdos vel lectorum vel lyristen vel, *quae mea liberalitas*, omnes. At tu apud nescio quem ostrea, vulvas, echinos maluisti. Dure fecisti : invidisti, nescio an *tibi*, certe mihi, sed tamen et tibi. Quantum non lusissemus, risissemus, studuissemus ! potes apparatius cenare apud multos,

nusquam hilarius simplicius incautius. In summa experire, et nisi postea te aliis potius excusaveris, nihil semper excusa. Vale.

7. (*a*) Of whom is Pliny speaking in 6 (*a*) and (*c*)? (*b*) Give the date of the letter from which extract 6 (*b*) is taken, and the circumstances under which it was written. (*c*) Give Trajan's reply, either in Latin or English. (*d*) Name the leading men of letters, contemporary with Pliny, and alluded to in his letters. Give a short sketch of the life of *any three*. (*e*) Write brief notes on :—*euripus: pugillares: μουσεῖον : clepsydra: sportulae: nomenclatores; cryptoporticus: procoeton: sestertium sescenties.*

8. Translate (at sight) :

C. PLINIUS FUSCO SUO S.

Quaeris quemadmodum in secessu, quo iam diu frueris, putem te studer oportere. Utile in primis, et multi praecipiunt, vel ex Graeco in Latinum vel ex Latino vertere in Graecum ; quo genere exercitationis proprietas splendorque verborum, copia figurarum, vis explicandi, praeterea imitatione optimorum similia inveniendi facultas paratur ; simul quae legentem fefellissent transferentem fugere non possunt. Intellegentia ex hoc et iudicium adquiritur. Nihil offuerit quae legeris hactenus ut rem argumentumque teneas, quasi aemulum scribere lectisque conferre, ac sedulo pensitare quid tu, quid ille commodius. Magna gratulatio, si nonnulla tu, magnus pudor, si cuncta ille melius. Licebit interdum et notissima eligere et certare cum electis. Audax haec, non tamen improba, quia secreta contentio. Itaque summi oratores, summi etiam viri sic se aut exercebant aut delectabant ; immo delectabant exercebantque.

Nam mirum est ut his opusculis animus intendatur remittatur. Tu memineris sui cuiusque generis auctores diligenter eligere. Aiunt enim multum legendum esse, non multa. Qui sint hi adeo notum probatumque est ut demonstratione non egeat ; et alioqui tam immodice epistulam extendi ut, dum tibi quemadmodum studere debeas suadeo, studendi tempus abstulerim. Vale.

B.A. ORDINARY EXAMINATION.

WEDNESDAY, APRIL 3RD :—MORNING, 9 TO 12.

LATIN.— { TACITUS.—ANNALS, BOOK II.
JUVENAL.—SATIRES, VIII. AND XIII.

Examiner,.....REV. GEORGE CORNISH, M.A., LL.D.

1. Translate :—

(A) Eodem anno mancipii unius audacia, ni mature subventum foret, discordiis armisque civilibus rem publicam perculisset. Postumi Agrippæ

servus, nomine Clemens, comperto fine Augusti, pergere in insulam Placasiam, et fraude aut vi raptum Agrippam, ferre ad exercitus Germanicos non servili animo concepit. Ausa ejus inpedivit tarditas onerariæ navis; atque interim patrata cæde, ad majora et magis præcipitia conversus furatur cineres, vectusque Cosam Etruriæ promontorium ignotis locis sese abdit, donec crinem barbamque promitteret: nam ætate et forma haud dissimili in dominum erat. Tum per idoneos et secreti ejus socios crebrescit vivere Agrippam, occultis primum sermonibus, ut vetita solent, mox vago rumore apud inperitissimi cujusque promptas aures, aut rursum apud turbidos eoque nova cupientes. Atque ipse adire municipia obscuro diei, neque propalam aspici, neque diutius isdem locis, sed quia veritas visu et mora, falsa festinatione et incertis valescunt, relinquebat famam aut præveniebat.

(B) Auctus omine, addicentibus auspiciis, vocat contionem et quæ sapientia provisa aptaque inminenti pugnæ disserit. Non campos modo militi Romano ad proelium bonos, sed si ratio adsit, silvas et saltus; nec enim inmensa barbarorum scuta, enormis hastas inter truncos arborum et enata humo virgulta perinde haberi quam pila et gladios et hærentia corpori tegmina, denserent ictus, ora mucronibus quærerent: non loricam Germano, non galeam, ne scuta quidem ferro nervove firmata, sed viminum textus vel tenuis et fucatas colore tabulas; primam utcumque aciem hastatam, ceteris præusta aut brevia tela, iam corpus ut visu torvum et ad brevem impetum validum, sic nulla vulnerum patientia: sine pudore flagitii, sine cura ducum abire, fugere, pavidos adversis, inter secunda non divini, non humani iuris memores.

(C) Ac tunc Arminius equo conlustrans cuncta, ut quosque ad vectus erat, reciperatam libertatem, trucidatas legiones, spolia adhuc et tela Romanis derepta in manibus multorum ostentabat; contra fugacem Maroboduum appellans, proeliorum expertem, Hercyniæ latebris defensum; ac mox per dona et legationes petivisse fœdus, proditorem patriæ, satellitem Cæsaris, haud minus infensis animis exturbandum quam Varum Quintilium interfecerint. Meminissent modo tot proeliorum, quorum eventu et ad postremum eiectis Romanis satis probatum, penes utros summa belli fuerit.

2. Ext. (B):—(1) *Operatum*, express this in Greek. (2) *Pila*, *Mucronibus*,—describe these. (3) Convert the sentence beginning, *Denserent ictus*, and in extract (C) the sentence beginning, *Meminissent modo tot prœliorum*, nto direct narration. (4) Parse fully, giving at the same time the construction—rules: (1) Prævisa, (2) disserit, (3) hærentia, (4) præusta, (5) sisterent, (6) trucidatas, (7) satellitem, (8) meminissent.

3. Write short explanatory notes on the following:—(1) Vestis Serica. (2) Loco sententiæ. (3) Distinctos senatus et equitum census. (4) Praelegentes. (5) Ludos circences eburna effigies praeiret. (6) Saliari carmine.

(7) Sacerdotum Augustalium locis. (8) Remmius evocatus. (9) Petita in fiscum. (10) Ductu Germanici, auspiciis Tiberii.

4. Comment on the peculiarities of the style of Tacitus, and on the historical value of his writings.

5. Translate, Juvenal, Satt. VIII. and XIII.:—

(*a*) Praeconem, Chaerippe, tuis circumspice pannis,
iamque tace. Furor est, post omnia perdere naulum.
Non idem gemitus olim nec vulnus erat par
damnorum, sociis florentibus, et modo victis.
Plena domus tunc omnis et ingens stabat acervus.
numorum Spartana chlamys, conchylia Coa,
et cum Parrhasii tabulis signisque Myronis
Phidiacum vivebat ebur, nec non Polycleti
multus ubique labor : rarae sine Mentore mensae.

Write short notes on *praeconem*, *naulum conchylia.*

(*b*) Par Agamemnonidae crimen ; sed causa facit rem
dissimilem. Quippe ille deis auctoribus ultor
patris erat caesi media inter pocula ; sed nec
Electrae iugulo se polluit, aut Spartani
sanguine coniugii ; nullis aconita propinquis
miscuit, in scena numquam cantavit Orestes ;
Troica non scripsit. Quid enim Verginius armis
debuit ulcisci magis, aut cum Vindice Galba ?
quid Nero tam saeva crudaque tyrannide fecit ?

Explain briefly the legendary and historical references in (*b*).

(*c*) Nona aetas agitur, peioraque saecula ferri
temporibus, quorum sceleri non invenit ipsa
nomen et a nullo posuit Natura metallo ;
nos hominum divumque fidem clamore ciemus,
quanto Faesidium laudat vocalis agentem
sportula ? Dic, senior bulla dignissime, nescis
quas habeat Veneres aliena pecunia

Sportula :—Derive the word and explain the custom ; also *bulla.*

(*d*) Credebant hoc grande nefas et morte piandum,
si iuvenis vetulo non adsurrexerat, et si
barbato cuicumque puer, licet ipse videret
plura domi fraga, et maiores glandis acervos.
Tam venerabile erat, praecedere quatuor annis,
primaque par adeo sacrae lanugo senectae !

Explain the use of the *Sing.* in *glandis*.

(*e*) Prandebat sibi quisque deus, nec turba deorum
talis, ut est hodie, contentaque sidera paucis
numinibus miserum urgebant Atlanta minori
pondere. Nondum aliquis sortitus triste profundi
imperium, aut Sicula torvus cum coniuge Pluton.
Nec rota, nec Furiae, nec saxum, aut vulturis atri
poena: sed infernis hilares sine regibus umbrae.
Improbitas illo fuit admirabilis aevo.

Comment on the above, with other passages, as illustrating the opinions of the poet on the current religion of the times.

6. Give the exact meaning and derivation, where you can, of the following :—stemmata, nanum, nobilis, viduas, ergastula, alapas, triscurria, arcana, gradivus, hostia, mobilis. Name derivations in English from any.

7. (*a*) What is the subject of Juvenal's Satire XIII? (*b*) Note the characteristics of the Satire of Juvenal. (*c*) Derive the word *Satire*.

THIRD YEAR HONOURS IN CLASSICS.

Examiner,..... .....Rev. George Cornish, M.A., LL.D.

1. Translate :—Apologia Socratis—chap. III.

2. (1) *ταῦτα γὰρ ἐωρᾶτε*:—to what is the reference? (2) *οὐχ ὡς ἀτιμάζων*:—give the force of *ὡς*. (3) *μὲ ἐγράψατο τὴν γραφὴν ταύτην*:—explain the syntax. (4) *περιεργάζεται* :—give the etymology and exact meaning of this verb.

3. (*a*) Give a short account of the composition of the Courts of Law at Athens, and sketch their general method of procedure. (*b*) Explain carefully the terms :—*δίκη, γραφή, κλητῆρες, ἀνάκρισις, βάσανος, συνήγοροι, κλέψυδρα, ψῆφοι, ἀτιμία*.

4. Translate, ib., (*c*) chap. XXIX., 1-18.

5. (*a*) ὅτι πόρρω * * * τοῦ βίου:—what use of the Genitive? give analogous instances. (*b*) ἅτε βραδὺς ὤν: what does ἅτε imply,—fact or supposition?

6. Translate, Crito, (*a*) chap. II.

τύχῃ ἀγαθῇ:—express this in Latin.

7. Translate, ib., (*b*) chap. X., 15-45.

8. (*a*) Distinguish between —οἱ σοφοὶ ὄνθρωποι, σοφοὶ οἱ ἄνθρωποι, and οἱ σοφοὶ τῶν ἀνθρώπων. ὁ οὐ πιστεύων and ὁ μὴ πιστεύων. ἔβησα and ἔβην· ἔστησα and ἔφυν. πέπεικα and πέποιθα. δουλεύω and δουλόω. ὅλωλεκα and ὄλωλα. (*b*) Give the various meanings according to their accent, of:—εἰμι, τιμησαι, νεων, οικοι, σιγα, βιος.

9. (*a*) Illustrate the use of the Infinitive as a verbal substantive. (*b*) What is meant by the Epexegetical Infinitive? (*c*) When can the subject of the Infinitive be in the Nominative case? (*d*) Distinguish between ἐψηφίσασθε αὐτοι ἐξελθεῖν βοηθήσοντες and ἐψηφίσασθε αὐτοὺς ἐξελθεῖν βοηθήσοντας.

10. (*a*) State the various uses of the Participle to express Cause, Time and Condition, etc. (*b*) Distinguish between the Genitive and Accusative Absolute. (*c*) Distinguish between τούτων λεχθέντων ἀπῆλθον and ταῦτα λέξαντες ἀπῆλθον. (*d*) "Αν implies a Condition, expressed or understood."—Illustrate this.

THIRD YEAR EXAMINATION FOR HONOURS IN CLASSICS.

GREEK.

Examiner, ...REV. GEORGE CORNISH, M.A., LL.D.

1. Translate:—(A) Euripides, Medea, vss. 908-928.

2. (*a*) Comment on the following usages, and illustrate where you can from other authors:—*παρεμπολῶντος. τὴν νικῶσαν βουλήν. ὑμῖν δε, ταιδες κ, τ. λ. τὰ πρῶτ' ἔσεσθαι, γυνὴ δὲ θῆλυ.* (*b*) Explain the meaning and construction of the following:—(*a*)*εἰσῆλθε μ' οἶκτος εἰ γενήσεται τάδε.* (*b*) *οὐκ οἶδ' ἂν εἰ πείσαιμι.* (*c*) *κελευσον αἰτεῖσθαι πατρὸς γυναῖκα παῖδας τήνδε μὴ φεύγειν χθόνα.* (*d*) *ἃ καλλιστεύεται τῶν νῦν ἐν ἀνθρώποισιν.*

3. Translate the following extt., noting any grammatical peculiarities, or various readings, or different interpretations:—

(*a*) *μή μοί τι δράσωσ' οἱ προσήκοντες γένει*
μητρῷον ἐκπράσσοντες ἀνοσιον φονον.

(*b*) *ἔρπε πρὸς βαλβῖδα λυπηρὰν βίου.*

(*c*) *ἡ δ' ἐξ ἀναύδου καὶ μύσαντος ὄμματος*
δεινὸν στενάξασ' ἡ τάλαιν' ἠγείρετο.

(*d*) *ἀλλὰ τῆς ἐμῆς κάκης*
τὸ καὶ προέσθαι μαλθακοὺς λόγους φρενός

(*e*) *εἰκὸς γὰρ ὀργάς θῆλυ ποιεῖσθαι γένος,*
γάμους παρεμπολῶντος ἀλλοίους πόσει.

(*f*) *οἶσθ' ὡς μετεύξει καὶ σοφωτέρα φανεῖ;*

(*g*) *οὐδὲ παύσεται χόλου πρὶν κατασκῆψαι τινα.*

4. Write short explanatory notes on:—*Ἀργοῦς κάρα λειψάνῳ πεπληγμένος. τῆς Τυρσηνίδος Σκύλλης. ἱερῶν*

ποταμῶν πόλις. ὁ Μαιας πομπαῖος ἄναξ. ὀμφαλὸν γῆς θεσπιωδόν.

5. Give, as exactly as you can, the meaning, as well as the derivation of the following words :—κυανέας, Συμπληγάδας, αἰσυμνᾳ, εὐκλαίαν, ἀποταυροῦται, παραμπέχειν, πλημμελές, ἁβρῶς, βαλβῖδα, φροῦδος, θέμενος, ἐπιθεάζω.

6. Parse the following verbs :—ὀλέσειε, ἤρξω, ἐθρέψατο ἔτλης, ἐμβαλεῖν, ἀναμνηθῆς, ἀπεῖναι, τεθνᾶσι, κατεξάνθην, ἧκεις, ἧκε, ἀμφιθῇ.

7. Write down the scheme (1) of the Iambic Trimeter Acatalectic, and (2) of the Anapaestic Dimeter Acatalectic, indicating the isochronous feet. Scan the last four verses of ext. (A).

8. Translate :—(B) Thucydides, Bk. VI., chaps. 27 and 57-58.

(Chap. 27). ἡ τετράγωνος ἐργασία :—Give the import of the article as here used. (*b*) Describe the Hermae, and point out in what the heinousness of the offence done to them consisted. (*c*) εἴ τις ῥῖδεν :—why the Indicative Mood? (*d*) ἐπὶ ξυνωμοσίᾳ ἀπὸ μετοίκων :—Note the use of these propositions. (*e*) ὑπολαμβανοντες καὶ νομίσαντες :—Why this difference of Tense?

9. (Chap. 53). ὡς κιλεύσοτας :—what is the subject of this? Distinguish between θρανῖται, ζευγῖται, θαλαμῖται, θῆτες, and ἐπίβαται.

10. Translate :— (C) Herodotus, Bk. VII., chaps. 14 and 73-74.

11. (*a*) Give an accountof the dialect used by Herodotus, and turn the following words into the common dialect: —*ὦν, ποιέει, ἐωυτοῦ, ἀπίκατο, * * * ἀληθέα, πλώοντας, τρηχέως, θύρῃσι, νῆας, πείθεο, πλεῦνες, οἰκός.* Parse and give the literal meaning of the following words :—*κεχαραγμένον, ἐδονέετο, προσωρέγοντο, ἀνάρτημαι, ἐμπαλασσόμενοι.*

12. Chap. 14 :—*τάδε * * * ἀνασχήσειν* ; explain the literal meaning.

THIRD YEAR EXAMINATION FOR HONOURS IN CLASSICS.

GREEK PROSE COMPOSITION.

Examiner,..... .....Rev. George Cornish, M.A., LL.D.

(A) Translate into Greek :—

1. The citizens were astonished at the shamelessness of the despots, but held in great honour the justice of their own rulers.

2. Unless you do what is right, you will not escape with impunity the punishment that awaits evil-doers.

3. The philosopher said that then only were men prosperous and happy when they did their duty, and were apt to perform honourable actions for the benefit of the State.

4. The market-people came into camp with abundant provisions which they sold to the troops at very high prices.

5. By constantly asserting that he was the son of Zeus he tried to persuade the people that he was a god, but only a few believed him.

6. In a free State no one should have such power as to escape punishment if he transgresses the laws.

THIRD YEAR HONOURS IN CLASSICS.

THE GOLDEN AGE OF ROMAN LITERATURE.

VARRO, CICERO, AND LUCRETIUS.

SATURDAY, MARCH 30TH :—MORNING, 9 TO 12.

Examiner,..... .....A. JUDSON EATON, PH.D.

1. Translate :

CICERO ATTICO SAL.

O hospitem mihi tam gravem ἀμεταμέλητον! fuit enim periucunde. Sed cum secundis Saturnalibus ad Philippum vesperi venisset, villa ita completa militibus est, ut vix triclinium, ubi cenaturus ipse Caesar esset, vacaret; quippe hominum CIↃ CIↃ. Sane sum commotus, quid futurum esset postridie, ac mihi Barba Cassius subvenit: custodes dedit. Castra in agro; villa defensa est. Ille tertiis Saturnalibus apud Philippum ad h. VII., nec quemquam admisit: rationes opinor cum Balbo; in le ambulavit in litore. Post h. VIII in balneum; tum audivit de Mamurra; non mutavit. Unctus est, accubuit. ἐμετικὴν agebat; itaque et edit et bibit ἀδεῶς et iucunde, opipare sane et apparate, nec id solum, sed

bene cocto,
Condito, sermone bono et, si quaeri', libenter.

Praeterea tribus tricliniis accepti οἱ περὶ αὐτὸν valde copiose; libertis minus lautis servisque nihil defuit: nam lautiores eleganter accepti. Quid multa? homines visi sumus. Hospes tamen non is, cui diceres: 'Amabo te, eodem ad me, cum revertere.' Semel satis est. σπουδαῖον οὐδέν in sermone, φιλόλογα multa. Quid quaeris? delectatus est et libenter fuit. Puteolis se aiebat unum diem fore, alterum ad Baias. Habes hospitium sive ἐπισταθμείαν odiosam mihi, dixi, non molestam. Ego paulisper hic, deinde in Tusculanum. Dolabellae villam cum praeterirete omnis armatorum copia dextra sinistra ad equum nec usquam alibi. Hoc ex Nicia.

2. (*a*) When did this visit of Caesar take place? (*b*) *fuit periucunde*: remark on this construction. (*c*) Scan the line of poetry, *condito*..... *libenter*.

3. Write explanatory notes on: *unas litteras*: *feriae conceptivae*: S. T E. Q. V. B. E.: *HS. centiens*: *Saturnalibus tertiis* (what date?): *a. d* VIII. *Kal. Quinct.*

4. Translate :

Ac ne illa quidem promissa servanda sunt quae non sunt eis ipsis utilia, quibus illa promiseris. Sol Phaëthonti filio, ut redeamus ad fabu-

las, *facturum se esse* dixit, *quidquid optasset*. Optavit, *ut in currum patris tolleretur*. Sublatus est. Atque is, antequam constitit, ictu fulminis deflagravit. Quanto melius fuerat in hoc promissum patris non esse servatum!.....Quid? Agamemnon, cum devovisset Dianae *quod in suo regno pulcherrimum natum esset illo anno*, immolavit Iphigeniam, qua nihil erat eo quidem anno natum pulchrius. Promissum potius non faciendum, quam tam taetrum facinus admittendum fuit. Ergo et promissa non facienda nonnumquam, neque semper deposita reddenda. Si gladium quis apud te sana mente deposuerit, repetat insaniens: reddere peccatum, sit, officium non reddere. Quid? si is, qui apud te pecuniam deposuerit bellum inferat patriae, reddasne depositum? Non, credo: facias enim contra rempublicam, quae debet esse carissima. Sic multa, quae honesta natura videntur esse, temporibus fiunt non honesta. Facere promissa, stare conventis, reddere deposita, commutata utilitate, fiunt non honesta.

CIC. DE OFF. III, 94.

5. (*a*) Remark on the grammatical construction of: *ut redeamus, optavit ut tolleretur: quanto melius f erat: quod pulcherrimum.* (*b*) What is the commonly received story of the sacrifice of Iphigenia? (*c*) Give the derivation of *immolavit, indoles.*

6. Write briefly on the Ciceronian philosophy describing the three leading schools of Cicero's time, and his relation to them.

7. Translate and comment on:

Hoc etiam tibi tute inter dum dicere possis.
"Lumina sis oculis etiam bonus Ancu' reliquit,
qui melior multis quam tu fuit, improbe, rebus.
inde alii multi reges rerumque potentes
occiderunt, magnis qui gentibus imperitarunt.
Scipiadas, belli fulmen, Carthaginis horror,
ossa dedit terrae proinde ac famul infimus esset.
adde repertores doctrinarum atque leporum,
adde Heliconiadum comites; quorum unus Homerus
sceptra potitus eadem aliis sopitu' quietest.'

Proinde ubi se videas hominem indignarier ipsum,
post mortem fore ut aut putescat corpore posto
aut flammis interfiat malisve ferarum,
scire licet non sincerum sonere, atque subesse
caecum aliquem cordi stimulum, quamvis neget ipse
credere se quemquam sibi sensum in morte futurum.

Lucretius.

8. (*a*) Explain the forms *purpurei, susum, probet, sis, expergitus.* (*b*) Translate and comment, especially on *italicized* words:

sic *alid* ex alio numquam desistet oriri,
vitaque *mancipio* nulli datur, omnibus *usu*.

9. Sketch the life, character, and writings of M. Terentius Varro. What works of his are extant?

10. State in outline Lucretius' theory of the nature of the soul, as given in the Third Book of the De Rerum Natura.

THIRD YEAR HONOURS IN CLASSICS.

THE GOLDEN AGE OF ROMAN LITERATURE.

TRANSLATION AT SIGHT.

THURSDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiner, ... A. JUDSON EATON, PH.D.

I.

Scipioni ut nuntiatum est in maiore discrimine Locris rem verti ipsumque Hannibalem adventare, ne praesidium etiam periclitaretur haud facili inde receptu, et ipse a Messana L. Scipione fratre in praesidio ibi relicto, cum primum aestu fretum inclinatum est, naves mari secundo misit. Hannibal a Buloto amni—haud procul is ab urbe Locris abest—nuntio praemisso, ut sui luce prima summa vi proelium cum Romanis ac Locrensibus consererent, dum ipse aversis omnibus in eum tumultum ab tergo urbem incautam adgrederetur, ubi luce coeptam invenit pugnam, ipse nec in arcem se inclu dere, turba locum artum impediturus, voluit, neque scalas quibus scanderet muros, adtulerat. Sarcinis in acervum coniectis cum haud procul muris ad terrorem hostium aciem ostendisset, cum equitibus Numidis circumequitat urbem, dum scalae quaeque alia ad oppugnandum, opus erant parantur, ad visendum qua maxime parte adgrederetur. Progressus ad murum, scorpione icto qui proximus eum forte steterat, territus inde tam periculoso casu receptui canere cum iussisset, castra procul ab ictu teli communit. Classis Romana a Messana Locros aliquot horis die superante accessit; expositi omnes e navibus et ante occasum solis urbem ingressi sunt. Postero die coepta ex arce a Poenis pugna, et Hannibal iam scalis aliisque omnibus ad oppugnationem paratis subibat muros, cum repente in eum nihil minus quam tale quicquam timentem patefacta porta erumpunt Romani. Ad ducentos improvidos cum invasissent occidunt: ceteros Hannibal, ut consulem adesse sensit, in castra recipit, nuntioque misso ad eos qui in arce erant, ut sibimet ipsi consulerent, nocte motis castris abiit. Et qui in arce erant, igni iniecto tectis quae tenebant, ut is tumultus hostem moraretur, agmen suorum fugae simili cursu noctem adsecuti sunt.

LIVY, XXIX, 7.

II.

"Maxume vellem, Patres Conscripti, rempublicam quietam esse, aut in periculis a promptissumo quoque defendi, denique prava incepta consultoribus noxae esse. Sed contra seditionibus omnia turbata sunt, et ab eis quos prohibere magis decebat. Postremo, quae pessumi et stultissumi decrevere, ea bonis et sapientibus faciunda sunt. Nam bellum atque arma, quamquam vobis invisa, tamen, quia Lepido placent, sumenda sunt. Nisi forte cui pacem praestare et bellum pati consilium est. Pro Di boni, qui hanc urbem, omissa cura, adhuc tegitis! M. Aemilius, omnium flagitiosorum postremus, qui peior an ignavior sit deliberari non potest, exercitum opprimundae libertatis habet et se e contempto metuendum effecit; vos mussantes et retractantes, verbis et vatum carminibus pacem optatis magis quam defenditis, neque intellegitis mollitia decretorum vobis dignitatem illi metum detrahi. Atque id iure, quoniam ex rapinis consulatum ob seditionem provinciam cum exercitu adeptus est. Quid ille ob bene facta cepisset, cuius sceleribus tanta praemia tribuistis?

"At scilicet eos, qui ad postremum usque legatos pacem concordiam et alia huiuscemodi decreverunt, gratiam ab eo peperisse. Immo despecti et indigni republica habiti praedae loco aestumantur, quippe metu pacem epetentes quo habitam amiserant."

SALLUST, frag. Or. L. Phil.

III.

At non audaci Turno fiducia cessit;
ultro animos tollit dictis atque increpat ultro:
"Troianos haec monstra petunt, his Iuppiter ipse
auxilium solitum eripuit, non tela neque ignes
expectans Rutulos. Ergo maria invia Teucris
nec spes ulla fugae: rerum pars altera adempta est.
Terra autem in nostris manibus, tot milia gentes
arma ferunt Italae. Nil me fatalia terrent,
siqua Phryges prae se iactant, responsa deorum:
sat fatis Venerique datum, tetigere quod arva
fertilis Ausoniae Troes. Sunt et mea contra
fata mihi, ferro sceleratam exscindere gentem,
coniuge praerepta: nec solos tangit Atridas
iste dolor solisque licet capere arma Mycenis.
Sed periisse semel satis est: peccare fuisset
ante satis penitus modo non genus omne perosos
femineum. Quibus haec medii fiducia valli
fossarumque morae, leti discrimina parva,
dant animos. At non viderunt moenia Troiae
Neptuni fabricata manu considere in ignis?
'Sed vos, o lecti, ferro qui scindere vallum

apparat et mecum invadit trepidantia castra.'
Non armis mihi Volcani, non mille carinis
est opus in Teucros; addant se protinus omnes
Etrusci socios; tenebras et inertia furta
Palladii caesis summae custodibus arcis
ne timeant, nec equi caeca condemur in alvo:
luce palam certum est igni circumdare muros.
Haud sibi cum Danais rem faxo et pube Pelasga
esse ferant, decumum quos distulit Hector in annum.
Nunc adeo, medior quoniam pars acta diei,
quod superest, laeti bene gestis corpora rebus
procurate, viri, et pugnam sperate parari."

VIRGIL.

IV.

Tingitur Oceano custos Erymanthidos Ursae,
aequoreasque suo sidere turbat aquas:
nos tamen Ionium non nostra findimus aequor
sponte: sed audaces cogimur esse metu.
Me miserum! quantis nigrescunt aequora ventis;
erutaque ex imis fervet harena vadis!
Monte nec inferior prorae puppique recurvae
insilit, et pictos verberat unda deos.
Pinea texta sonant; pulsi stridore rudentes:
adgemit et nostris ipsa carina malis.
Navita confessus gelidum pallore timorem
iam sequitur victus, non regit arte, ratem:
utque parum validus non proficientia rector
cervicis rigidae frena remittit equo:
si non quo voluit, sed quo rapit impetus undae,
aurigam video vela dedisse rati.
Quod nisi mutatas emiserit Aeolus auras,
in loca iam nobis non adeunda ferar;
nam procul, Illyriis laeva de parte relictis,
interdicta mihi cernitur Italia.
Desinat in vetitas quaeso contendere terras,
et mecum magno pareat aura deo.
Dum loquor et cupio pariter timeoque repelli,
increpuit quantis viribus unda latus!
Parcite, caerulei vos saltem numina ponti;
infestumque mihi sit satis esse Iovem.
Vos animam saevae fessam subducite morti:
si modo qui periit, non periisse potest.

OVID, *Fasti*, I.

V.

Si plausoris eges aulaea manentis et usque
sessuri, donec cantor " Vos plaudite " dicat,
aetatis cuiusque notandi sunt tibi mores,
mobilibusque decor naturis dandus et annis.
Reddere qui voces iam scit puer et pede certo
signat humum, gestit paribus colludere et iram
colligit ac ponit temere et mutatur in horas.
Imberbus iuvenis tandem custode remoto
gaudet equis canibusque et aprici gramine campi,
cereus in vitium flecti, monitoribus asper,
utilium tardus provisor, prodigus aeris,
sublimis cupidusque et amata relinquere pernix.
Conversis studiis aetas animusque virilis
quaerit opes at amicitias, inservit honori,
commisisse cavet quod mox mutare laboret.
Multa senem circumveniunt incommoda, vel quod
quaerit et inventis miser abstinet et timet uti,
vel quod res omnes timide gelideque ministrat.
dilator, spe longus, iners, avidusque futuri,
difficilis, querulus, laudator temporis acti
se puero, castigator censorque minorum.
Multa ferunt anni venientes commoda secum;
multa recedentes adimunt. Ne forte seniles.
mandentur iuveni partes pueroque viriles,
semper in adiunctis aevoque morabimur aptis.

HORACE, *Ars Poetica*.

THIRD YEAR HONOURS IN CLASSICS, 1895.

GOLDEN AGE OF ROMAN LITERATURE.

CATULLUS, HORACE, AND VIRGIL.

SATURDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner, ...A. JUDSON EATON, M.A., PH.D.

1. Translate and com ent on words italicized :—

(*a*) Quoi dono lepidum novom libellum
Arida modo *pumice expolitum?*
Corneli, tibi: namque tu solebas
Meas esse aliquid putare nugas,
Iam tum cum ausus es unus Italorum
Omne aevum tribus explicare chartis
Doctis, Iuppiter, et *laboriosis*.
Quare habe tibi quidquid hoc libelli,
Qualecumque, quod o patrona virgo,
Plus uno maneat perenne saeclo.

(*b*) Alfene inmemor atque unanimis false sodalibus,
Iam te nil miseret, dure, tui dulcis amiculi ?

Iam me prodere, iam non dubitas fallere, perfide ?
Nec facta inpia fallacum hominum caelicolis placent

Quod tu neglegis, ac me miserum deseris in malis.
Eheu quid faciant, dic, homines, cuive habeant fidem ?

Certe tute iubebas animam tradere, inique, me
Inducens in amorem, quasi tuta omnia mi forent.

Idem nunc retrahis te ac tua dicta omnia factaque
Ventos inrita ferre ac nebulas aerias sinis.

Si tu oblitus es, *at* di meminerunt, meminit Fides,
Quae te ut paeniteat postmodo facti faciet tui.

(*c*) A misera, adsiduis quam luctibus *externavit*
Spinosas *Erycina* serens in pectore curas
Illa tempestate, ferox quom robore Theseus
Egressus curvis e litoribus Piraei
Attigit *iniusti* regis *Gortynia* tecta.
Nam perhibent olim crudeli peste coactam
Androgeoneae poenas exolvere caedis
Electos iuvenes simul et decus innuptarum
Cecropiam solitam esse dapem dare Minotauro.
Quis angusta malis cum moenia vexarentur,
Ipse suom Theseus pro caris corpus Athenis
Proicere optavit potius quam talia Cretam
Funera Cecropiae nec funera portarentur,
Atque ita nave levi nitens ac lenibus auris
Magnanimum ad Minoa venit sedesque superbas.

2. Name the metres employed in the above extracts, and write out the scheme of each. Scan the first line of (*a*) and of (*b*), and the seventh, eighth and ninth lines of (*c*), remarking on any peculiarities.

3. Write notes, grammatical or explanatory, on the following passages :

(*a*) Ait fuisse navium celerrimus.

(*b*) Suus cuique attributus est error,
Sed non videmus manticae quod in tergo est.

(*c*) Non ingrata tamen frustra munuscula divis
Promittens tacito succendit vota labello.

(*d*) Chartae regiae, novi libri,
Novi umbilici, lora rubra membrana
Derecta plumbo et pumice omnia aequata.

4. Translate :—Horace, Epistles :

(*a*) Bk. I., Ep. VII., 25–33. *Quodsi.....subisti.*

(*b*) Ep. XI., 25–30. *Nam si.....aequus.*

(*c*) Bk. II., Ep. I., 156–163. *Graecia capta.....ferrent.*

(*d*) Ep. II., 180–189. *Gemmas.....ater.*

5. Comment on *any two* of the extracts from Horace's Epistles.

6. Define the following terms :—*rudis, tutela, viduas, cenacula, cohors, caminus, mediastinus, praecanus, sorites, pilenta, aedituus, vehemens, libra et aere : concordia discors ; nato Caesare* (I. V. 9).

7. Write on *any three* of the following subjects :

1. Early lyric poetry at Rome.
2. Date of the death and birth of Catullus.
3. Characterization of Catullus, as a poet.
4. The Epistles of Horace : their date and general character.
5. The minor poems of Virgil.

THIRD YEAR HONOURS IN CLASSICS.

GOLDEN AGE OF ROMAN LITERATURE.

TIBULLUS, PROPERTIUS, OVID.

TUESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiner, ...A. JUDSON EATON, PH.D.

1. Translate with brief notes where required :—

(*a*) Huc ades et Genium ludo centumque choreis
Concelebra et multo tempora funde mero :
Illius et nitido stillent unguenta capillo,
Et capite et collo mollia serta gerat.
Sic venias hodierne : tibi dem turis honores,
Liba et Mopsopio dulcia melle feram.
At tibi succrescat proles, quae facta parentis
Augeat et circa stet veneranda senem.
Nec taceat monumenta viae, quem Tuscula tellus
Candidaque antiquo detinet Alba Lare.
Namque opibus congesta tuis hic glarea dura
Sternitur, hic apta iungitur arte silex.
Te canit agricola, e magna cum verterit urbe
Serus, in offensum rettuleritque pedem.
At tu, Natalis, multos celebrande per annos,
Candidior semper candidiorque veni.

(*b*) Sed tempus lustrare aliis Helicona choreis,
Et campum Haemonio iam dare tempus equo.
Iam libet et fortes memorare ad proelia turmas
Et Romana mei dicere castra ducis.
Quod si deficiant vires, audacia certe
Laus erit; in magnis et voluisse sat est.
Aetas prima canat Veneres, extrema tumultus.
Bella canam, quando scripta puella mea est·
Nunc volo subducto gravior procedere voltu,
Nunc aliam citharam me mea Musa docet.
Surge, anime, ex humili iam carmine; sumite vires
Pierides; magni nunc erit oris opus.
Iam negat Euphrates equitem post terga tueri
Parthorum, et Crassos se tenuisse dolet.
India quin, Auguste, tuo dat colla triumpho,
Et domus intactae te tremit Arabiae.
Et, si qua extremis tellus se subtrahit oris,
Sentiet illa tuas postmodo capta manus.
Haec ego castra sequar: vates tua castra canendo
Magnus ero: servent hunc mihi fata diem!
Ut caput in magnis ubi non est tangere signis,
Ponitur hic imos ante corona pedes,
Sic nos nunc, inopes laudis conscendere carmen,
Pauperibus sacris vilia tura damus.
Nondum etiam Ascraeos norunt mea carmina fontes,
Sed modo Permesi flumin lavit Amor.

(*c*) Multa quidem scripsi: sed quae vitiosa putavi,
Emendaturis ignibus ipse dedit.
Tunc quoque, cum fugerem, quaedam placitura cremavi,
Iratus studio carminibusque meis.
Molle Cupidineis nec inexpugnabile telis
Cor mihi, quodque levis causa moveret, erat.
Cum tamen hic essem, minimoque accenderer igne,
Nomine sub nostro fabula nulla fuit.
Et iam complerat genitor sua fata, novemque
Addiderat lustris altera lustra novem.
Non aliter flevi, quam me fleturus ademptum
Ille fuit. Matri proxima iusta tuli.
Felices ambo tempestiveque sepulti,
Ante diem poenae quod periere meae!

2. Translate, with full notes on all difficulties of reading, construction and reference:

(*a*) Utque maris vastum prospectet turribus aequor
Prima ratem ventis credere docta Tyros.

(*b*) Atque aliqua assidue textrix operata Minervam
Cantat, et applauso tela sonat latere.

(c) Vera cano : sic usque sacras innoxia laurus
Vescar, et aeternum sit mihi virginitas.

(*d*) Non datur ad Musas currere lata via.

(*e*) Cur tua praescriptos evecta est pagina gyros ?

(*f*) Nam quis equo pulsas abiegno nosceret arces,
Fluminaque Haemonio cominus isse viro,
Idaeum Simoenta Iovis cunabula parvi
Hectora per campos ter maculasse rotas ?

3. What are our sources of information for the life of the poet Tibullus? Give a short account of his chief patron and friend.

4. What seems to have been Propertius' relation to the other famous poets of his time ?

THIRD YEAR HONOURS IN CLASSICS

GOLDEN AGE OF ROMAN LITERATURE.

THE HISTORIANS.

SATURDAY, APRIL 13TH :—MORNING, 9 TO 12.

Examiner,..... A. JUDSON EATON, PH.D.

1. Translate :

Post paucos dies, L. Saenius senator in senatu litteras recitavit, quas Faesulis adlatas sibi dicebat in quibus scriptum erat, C. Manlium arma cepisse ante diem VI. Kalendas Novembris. Simul, id quod in tali re solet, alii portenta atque prodigia nuntiabant, alii conventus fieri, arma portari Capuae atque in Apulia servile bellum moveri. Igitur senati decreto Q. Marcius Rex Faesulas, Q. Metellus Creticus in Apuliam circumque ea loca missi—ei utrique ad urbem imperatores erant, inpediti ne triumpharent calumnia paucorum, quibus omnia honesta atque inhonesta vendere mos erat ——, set praetores Q. Pompeius Rufus Capuam, Q. Metellus Celer in agrum Picenum, eisque permissum, uti pro tempore atque periculo exercitum conpararent. Ad hoc, si quis indicavisset de coniuratione, quae contra rem publicam facta erat, praemium servo libertatem et sestertia centum, libero inpunitatem eius rei et sestertia ducenta, itemque decrevere, uti gladiatoriae familiae Capuam et in cetera municipia distribuerentur pro cuiusque opibus, Romae per totam urbem vigiliae haberentur eisque minores magistratus praeessent.

SALLUST.

2. (*a*) Give the derivation and meaning of:—*portenta, prodigia, bellum, senatus, praetor, periculum, praemium, sestertia, familia municipium, magistratus.* (*b*) Distinguish *ferre, portare,* and *agere; conventus, contio, coetus, concilium,* and *consilium.* (*c*) Remark on the phrases *ante diem VI. Kal. Novemb.; senati decreto; circumque loca; ei utrique; ad urbem imperatores; gladiatoriae familiae; minores magistratus.*

3. Translate:—

(*a*) Livy, Bk., XXI., ch. 44. *Inferimus bellum ..... terminos observat.*

(*b*) Bk. XXII., ch. 29. *Tum Fabius..... Fabio victum.*

(*c*) Bk. XXIII., ch. 28, through *ad Hiberum descendit.*

4. Ext. (*a*)—*oppugnassetis, deditos, affecturi fuerunt, sui arbitrii:* account for the construction of these words. Ext. (*b*). Derive *iurgandi, ostendit.* Explain syntax of *receptui.* Ext. (*c*) *transitus;* remark on the meanings of this word in Livy. Explain the grammatical construction of the sentence *inopem..... penetraturum fuisse.*

5. (*a*) Derive *pontifex, nuntius, caementa, trucido, stipendium.*

(*b*) Distinguish *signa, vexilla, aquila; speculator, explorator; praeda, manubiae, spolia.*

(*c*) Explain terms *antesignani, triarii, busta Gallica, dies nefasti, cooptatio, socii navales.*

(*d*) Give the geographical position of *Telesia, Casinum, Sinuessa, Nola, Placentia.*

(*e*) What Roman was called "the shield of the people"? Who "the sword of the people"?

(*f*) What is the meaning of the verb *antiquo*?

6. Enumerate the leading peculiarities of the language and style: (*a*) of Sallust, (*b*) of Livy.

7. (*a*) What is Quintilian's judgment in regard to Sallust and Livy as historians? (*b*) Write a life of Nepos, and describe his general character as an historian.

THIRD YEAR HONOURS.

LATIN PROSE COMPOSITION.

MONDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A., PH.D.

(A)

When the war with the Latins had broken out, and both the hostile armies lay encamped against each other in Campania, the consuls issued orders to avoid all irregular fighting, and to take up the combat only on the explicit command of their superior officers. Then it happened that the son of the consul, T. Manlius, who led a troop of cavalry, approached the enemy's camp, and was challenged by Mettius, the commander of the Tusculan horse. Stung by the contemptuous words of the Tusculan, the fiery youth forgot the injunction of his father, accepted the challenge, and killed Mettius. In triumph he returned to the camp, decorated with the arms of his slain enemy, and accompanied by an exulting crowd of his men. With a gloomy look his father turned away from him, assembled immediately the whole army by the blast of the trumpet, and pronounced the sentence of death over his victorious son. The safety of the State was not to suffer from parental indulgence. In the contest of duty and paternal love, the feeling of the Roman citizen triumphed.—IHNE.

(B)

To such a degree does Fortune blind a people, when she is determined upon their ruin, that when danger of the greatest magnitude threatened that State which in former times had left no means untried to procure aid, and had on many occasions nominated a dictator, now when an enemy whom they had never met, or even heard of, was advancing in arms against them, looked not for any extraordinary aid or assistance. Tribunes whose rashness had brought on the troubles were entrusted with the chief command. They extenuated the importance which report gave to the war; and the consequence was that they used no greater diligence in levying forces than was usual in case of wars in their midst. Meanwhile, the enemy, hearing that the violators of mankind had been rewarded with honors, and that their embassy had been insulted, were inflamed with anger, a passion which that race knows not how to control, and instantly they snatched up their ensigns and began the march in all haste. Their precipitate movement caused such alarm wherever they passed that the inhabitants of the cities ran together to arms, and the peasants betook themselves to flight; then they signified to them by loud shouts that to Rome they were going.

THIRD YEAR HONOURS IN CLASSICS.

GREEK AND ROMAN HISTORY.

WEDNESDAY, APRIL 24TH, 1895:—MORNING, 9 TO 12.

Examiner, ... A. JUDSON EATON, M.A., PH.D.

1. Give an account of the Pelasgi. What was Grote's view respecting them?

2. The domestic and foreign policy of Pericles. Sketch the constitutional changes that took place under his administration.

3. Draw a comparison between Carthage and Rome, in their economy, in their constitution, and in their military system.

4. The imperial authority of Augustus. Show how it was a combination of the prerogatives of several Republican offices. Note the several steps by which Augustus acquired his various powers, until he accepts the "potestas consularis." Give dates when you can.

5. Mention the most remarkable particulars in the life of Hannibal, with the date of each.

6. Write on *any three* of the following subjects:—
   (*a*) The Battle of Cannae.
   (*b*) Siege of Syracuse.
   (*c*) P. Cornelius Scipio—His operations in Spain.
   (*d*) The early career of Tiberius.

THIRD YEAR HONOURS IN CLASSICS.

GENERAL PAPER.

THURSDAY, APRIL 25TH, 1895:—MORNING, 9 TO 12.

Examiner, ... A. JUDSON EATON, PH.D.

1. State the functions of the Roman senate, of the Comitia Curiata and the Comitia Centuriata, under the kings.

2. Give an account of the Roman Calendar.

3. Explain the origin of the Latin alphabet.

4. Discuss the origin of the Roman numeral signs.

5. Define the following terms, giving derivation where known: bibliopolae, librarii, δέλτος, pergamena, παλίμψεστον, scholia, imperium, potestas, provincia, praefectus vigilum.

6. How were manumitted slaves named?

7. *Pridie idus Febr. haec scaipsi ante lucem: eo die apud Pomponium in eius nuptiis eram cenaturus* (Cic. Q. F. 2, 3 § 7). Translate, according to the English idiom, writing a note on the tense of *scripsi* and *cenaturus eram*.

8. Give the various meanings of *per*, *prae*, and *sub* in composition. Remark on the formation of *gentile adjectives*.

9. When may *unus* be used in the plural? Illustrate.

10. (*a*) Write in numbers IↃↃ and CCIↃↃ. (*b*) Translate into Latin *two-thirds*, *four-sevenths*. (*c*) Express Jan. 9th and Oct. 9th, according to the Latin notation.

11. Determine the metre of the following lines:

(*a*) Iam prope lux aderat qua ne discedere Caesar
Finibus extremae iusserat Ausoniae.

(*b*) Quid quaeris? an nos sexaginta natus es.

(*c*) Aeque est beatus ac poema cum scribit.

(*d*) Virginibus puerisque canto.

12. Note the main divisions of the Indo-European family, and the chief representatives of each. What do we mean when we speak of the Indo-European language?

13. Give a scientific division of the grammar of any language.

14. Connect etymologically the French *larme* and the English *tear*. How are the forms *νύκτα* and *noctem* related?

15. What is *itacism*? Give an instance of it in modern Greek.

16. How are we enabled to determine accurately the pronunciation of the Latin vowels?

17. Define *ablaut*, and illustrate. Explain its causes.

B.A. EXAMINATION FOR HONOUR IN CLASSICS

GREEK.

Examiner, ...REV. GEORGE CORNISH, M.A., LL.D.

1. Translate:—

(*a*) Æschylus, Prometheus Vinctus, vss. 560-588.

(*b*) Æschylus, Seven against Thebes, vss. 597-614.

2. Write explanatory notes on the following expressions:—(1) *πύλαις ἑβδόμαις.* (2) *ἵππιος ἄναξ,* (3) *Λύκειος.* (4) What is said to have been the personal and political reference of ext. (*b*).

3. Translate:—

Sophocles, Antigone, vss. 1257-1291.

4. (*a*) Define the metrical term *κομμός*, and show its derivation. (*b*) Construe carefully and interpret vss. 1278-1280.

5. Translate the following extracts from the Antigone, adding an explanatory note where you see fit:—

(*a*) *ἔχεις τί κεἰσήκουσας; ἢ σε λανθάνει,*
πρὸς τοὺς φίλους στείχοντα τῶν ἐχθρῶν κακά;

(*b*) *τί δ' ὦ ταλαῖφρον εἰ τάδ' ἐν τούτοις, ἐγὼ*
λύουσ' ἄν ἢ 'φάπτουσα προσθείμην πλέον;

(*c*) *οὔτ' ἂν κελεύσαιμ' οὔτ' ἂν εἰ θέλοις ἔτι*
πράσσειν ἐμοῦ γ' ἂν ἡδέως δρώης μέτα.

(*d*) *ἐᾶν δ' ἄθαπτον καὶ πρὸς οἰωνῶν δέμας*
καὶ πρὸς κυνῶν ἐδεστόν αἰκισθέντ' ἰδεῖν·

(*e*) *λόγοι δ' ἐν ἀλλήλοισιν ἐρρόθουν κακοί,*
φύλαξ ἐλέγχων φύλακα κἀν ἐγίγνετο
πληγὴ τελευτῶσ' οὔδ' ὁ κωλύσων παρῆν.

6. Translate:—Euripides, Medea, vss. 908-928.

7. (*a*) Comment on the following usages, and illustrate where you can from other authors:—*παρεμπολῶντος. τὴν νικῶσαν βουλήν. ὑμῖν δε, παῖδες κ. τ. λ, τὰ πρῶτ' ἔσεσθαι. γυνὴ δὲ θῆλυ.* (*b*) Explain the meaning and construction of the following:—(*a*) *εἰσῆλθε μ' οἶκτος εἰ γενή-*

σεται τάδε. (*b*) οὐκ οἶδ' ἂν εἰ πείσαιμι. (*c*) κέλευτον αἰτεῖσθαι πατρὸς γυναῖκα παῖδας τήνδε μὴ φεύγειν χθονα. (*d*) ἃ καλλιστεύεται τῶν νῦν ἐν ἀνθρώποισιν.

8. Translate:—Pindar, Olymp. VI., vss. 92-105.

9. (*a*) Construe and explain vss. 1-3 of this ode. (*b*) vss. 23-24, ὄφρα * * * βάσομεν:—Indicative or Subjunctive? (*c*) vs. 25, ἐξ ἄλλᾶν:—to what is the reference? (*d*) ἀμεμφεῖ ἰῶ:—explain this figure of rhetoric, and cite other instances. (*e*) Parse the following words giving equivalents in Attic:—δίδοι, Ἀγησία, ἴμεν, ῥῆ, γεγάκειν, ἀδεῖν, φαντι, ἐριπέντι. (*g*) What is the *Schema Pindaricum*?

10. Translate the following phrases from Pindar, noting differences of interpretation:—(1) ἀκέρδεια λέλογχεν θαμινὰ κακαγόρος. (2) ὁ μέγας δὲ κίνδυνος ἄναλκιν οὔ φῶτα λαμβάνει. (3) ἤτοι βροτῶν γε κέκριται πεῖρας οὐ τι θανάτου. (4) δίαπειρά τοι βροτῶν ἔλεγχος. (5) τεκμαίρει χρῆμ' ἕκαστον. (6) Ἀΐδα τοι λάθεται ἄρμενα πράξαις ἀνήρ. (7) ἀγαθοι δὲ καὶ σοφοὶ κατὰ δαίμον' ἀνδρες ἐγένοντο. (8) ἄμαχον δὲ κρύψαι τὸ συγγενὲς ἦθος.

11. Thucydides, Book VI., Chaps. 47-48.

12. (*a*) Point out the correlative to μὲν at the opening of chap. 47. (*b*) Name the several clauses dependent on ἦν γνώμη. (*c*) τῇ πόλει:—construe. (*d*) ἀπὸ τοῦ ἀδοκήτου:—how may the ellipsis be supplied, and what is the import of the preposition? (*e*) ἀπράκτως—ἀπράκτους:—distinguish these words. (*f*) ἐφόρμησιν—ἐφόρμισιν:—distinguish between these readings.

13. Translate carefully the following extt. adding an explanatory note, grammatical or general, where you see

meet:—(*a*) *ὧν γὰρ ἐν ἀξιώματι ὑπὸ τῶν ἀστῶν, ταῖς ἐπιθυμίαις μείζοσιν ἢ κατὰ τὴν ὑπάχρουσαν ἐχρῆτο ἔς τε τὰς ἱπποτροφίας καὶ τὰς ἄλλας δαπάνας· ὅπερ καὶ καθεῖλεν ὕστερον τὴν τῶν Ἀθηναίων πόλιν οὐχ ἥκιστα.* (*b*) *καὶ ὁ στόλος οὐχ ἧσσον τόλμης τε θάμβει καὶ ὄψεως λαμπρότητι περιβόητες ἐγένετο ἢ στρατιᾶς πρὸς οὓς ἐπῄεσαν ὑπερβολῇ, καὶ ὅτι μέγιστος ἤδη διάπλους ἀπὸ τῆς οἰκείας καὶ ἐπὶ μεγίστῃ ἐλπιδι τῶν μελλόντων πρὸς τὰ ὑπάρχοντα ἐπεχειρήθη.* (*c*) *καὶ τῷ μὲν Νικίᾳ προσδεχομένῳ ἦν.*

14. Translate, (*d*) Aristotle, The Poetics:— (*a*) Chap. 10. (*b*) Chap. 24, §§ 1-3 inclusive (Ed. Oxon.).

15. A short account of this treatise, with its editors and commentators.

16. Define briefly the following terms:—*ποιητική, ἐποποιία, μίμησις, ἐπεισόδιον, πρόλογς, τραγωδία.*

B.A. EXAMINATION FOR HONOURS IN CLASSICS.

GREEK.

Examiner, ...Rev. George Cornish, M.A., LL.D.

1. Translate:—

Demosthenes, De Corona (Ed. Tanchnitz) (*a*) p. 248, *ὑμεῖς τοίνυν * * * γενναίως.* (*b*) p. 305, *τί δὲ μεῖζον * * * εὑρήσεις.*

2. Brief notes on the political references of ext. (*a*), and on the personal references to Æschines in (*b*).

3. Translate the following extract:—

Δεδόχθαι τῷ δάμῳ τῳ Βυζαντίων καὶ Περινθίων Ἀθαν-

ἰοις δόμεν ἐπιγαμίαν πολιτείαν ἔγκτασιν γᾶς καὶ οἰκιᾶν, προεδρίαν ἐν τοῖς ἀγῶσι, πόθοδον ποτὶ τὰν βωλὰν καὶ τὸν δᾶμον πράτοις μετὰ τὰ ἱερά, καὶ τοῖς κατοικέειν ἐθέλουσι τὰν πόλιν ἀλειτουργήτοις ἦμεν πασᾶν τᾶν λειτουργιᾶν. Name the dialect, turn into Attic and state in what districts of Greece it was used.

4. Translate :—

Æschines, Contra Ctesiphontem.—(*a*) (Ed. Teubner) §§ 161-162, and (*b*) §§ 222-223.

5. Ext. (*a*) *τὸν νεανίσκον*,—to whom is the reference. *οἱ πάραλοι*, explain. *ἐν τῷ συνεδρίῳ*,—to what body does this refer?

6. Translate, Xenophon, Hellenics, Book II., chap. 3, §§ 51-53 inclusive.

7. Write explanatory notes on the following from Book I. :—(*a*) *μετ' ὀλίγον δὲ τούτων*,—explain the Genitive. (*b*) *ἡμεροσκόπος*. (*c*) *ἀνεβίβαζε*. (*d*) *ὡς ἤνοιγε*· (*e*) *συμφράξαντες τὰς ναῦς καὶ παραταξάμενοι*. (*f*) *ἐπιστολέως* (*g*) *τὰ καλά—κᾶλα*. (*h*) *ἐπιβάτης*. (*i*) Distinguish between *περίπλους* and *διέκπλους*. *ἐμβολὴ* and *ἔμβολος*.

8. Translate, Plato, De Republica, Books I. and II. :—

(*a*) Bk. I., Cap. 2, down to *πάνυ οἰκείους* ; and Bk. II., cap. 4 to *δοτέον οὖν* * * * *τοιοῦτος εἴη*.

9. Characterize the narrative style of Plato. *ἁπλοῦν*, —derive this word ; give its equivalent in Latin and comment on its meaning.

10. Translate :—Aristophanes, The Frogs, vss. 875—906.

11. (*a*) What are the points of ridicule against Euripides in the above ext., and generally throughout this play, and are they well grounded? (*b*) Explain briefly the following references:—(1) Κλεοφωντος * * Θρηκία χελιδών. (2) παραπετάσμασιν τοῖς Μηδικοῖς. (3) Θηραμένης ὁ κομψός. (4) οὐ Χῖος ἀλλὰ Κεῖος. (5) οἱ Κεραμῆς.

12. Translate, Theocritus, Idylls:—(*a*) II., vss. 1-15 (*b*) IV., vss. 1-14. (*c*) V., vss. 6-20.

13. καταθύσομαι,— parse. δωδεκαταῖος, — explain the formation and meaning. ἴυγξ,—what was the custom here referred to? καναφόρος, — explain. βαύσδει, — how formed? διαθρύπτεται,—give the derivation and literal meaning. τὸν ἀπὸ γραμμᾶς κινεῖ λίθον,—explain the reference and meaning of the proverb, giving an English proverb as its equivalent.

14. Translate, Hesiod, Works and Days:—(*a*) vss. 246-260. (*b*) vss. 662-675.

15. Explain the title, Ἔργα καὶ Ἡμέραι, and show the division of this poem. Point out words in Hesiod that had the Digamma.

16. (*a*) Indicate the Dialect of the following words severally and give their equivalents in Attic:—νίκη, παρῆσθευ. αἴκα, ἐκτάσα, ψέ, ἦς, λασθῆμεν, δίδοι, ἐνθών, τὼς. κάνθαρος, ὑφίητι, ὥπερ, θᾶσαι, ἐμίν, τυ, ἀείδες. (*b*) Resolve the following Crases:—ὡξ, τὠὐβούλοιο, κεἰφ, κἠπεε, χὡς κἤμ', χἀμῖν.

B.A. EXAMINATION FOR HONOURS IN CLASSICS.

GREEK PROSE COMPOSITION.

Examiner,..... ....REV. GEORGE CORNISH, LL.D.

Translate into Greek :—

(A) My father Cephalus was induced by Pericles to come to this country, and he lived here thirty years; and neither we nor he at any time either prosecuted any man at law or were prosecuted; but we lived so modestly under the popular Government as neither to trespass against others nor to be wronged by others. But when the Thirty, profligates and false accusers as they were, entered on the government, they alleged that it was requisite to purify the state from the wicked, and that the rest of the citizens should devote themselves to virtue and justice. But, though they spoke thus, they did not venture to act thus; as I, after first speaking of my own affairs, will endeavour to convince you in reference to yours. For Theognis and Peison declared before the Thirty, with regard to the resident-aliens, that there were certain persons disaffected to the constitution:—that this would be an excellent opportunity to seem to punish them, but in reality to get money. They readily persuaded their hearers, for they thought nothing of murdering men, but made a great point of getting money.

(B) 1. Pythagoras used to say that these two excellent things had been given by the gods to men, speaking truth and doing good. 2. The King hoped that the Athenians would come out against him and not suffer their land to be laid waste. 3. Gelon, after having conquered the Carthaginians at Himera, brought the whole of Sicily under his sway. 4. So long as Pericles was their leader, the Athenians performed many noble achievements. 5. The general happened to be present; had he not, the heavy-armed infantry of the enemy would have entered the town without being discovered. 6. Having said these things they took their departure; when this had been said they took their departure.

B.A. EXAMINATION FOR HONOURS IN CLASSICS.

LATIN.

1. Translate Livy, Bk. XXII., chap. 56.

2. (1) *Nundinantem*; give the derivation and meaning of this word. (2) *Cum in hanc sententiam pedibus omnes issent*;—explain this, stating what you know generally of the mode of procedure in the Roman Senate. (3) *Ut sacrum anniversarium Cereris intermissum sit*; when was this festival celebrated?

3. (*a*) Give an account of the writings of Livy, stating what have been lost and what have come down to us. (*b*) What authorities had he at

command for the history of the Second Punic War? How did he use them? (*c*) Point out archaic forms of words in chap. 10, Bk. XXII., and give later equivalents for them.

4. Translate Terence, Adelphi, Act IV., Sc. 1.

5. (*a*)—(1) Supply the ellipses with:—utinam quidem; nihilne in mentem? tanto nequior; hem tibi autem; nusquam tu me. (2) Fervit:—Explain the conjugation. (3) Quam ovem:—Why the Accus? (4) Potin ut desinas:—Explain the construction. (*b*) Write short notes on:—(1) Lupus in fabula. (2) Locum reprehensum. (3) Liberali illam assero causa manu. (4) Injeci scruplum homini. (5) Patrissas. (6) Silicernium. (7) Mastigia. (8) Non posteriores faciam.

6. Translate:—

Plautus, Aulularia, Act IV., Sc. 8.

7. (1) Pici * * * colunt:—Explain the probable reference. (2) Rex Philippus:—To whom is the reference and why? (3) Conlocavi in arborem:—Note the construction. (*b*) Name the metre of the above (Ext.) and scan any four verses. In what respect does it differ from the corresponding metre in Aristophanes? (*c*) Comment on the formation of the following words:—Sodes, cedo, sis, scibo, seorsum, frugi, prorsum, villi, aibat, pultare, ellam, sedulo.

8. Translate Cicero, de Officiis, Bk. III., chap. 9, from "Fimbriam consularem" to end.

9. (1) Explain the phrases *quicum* * * * *mices*. *Sponsionem fecisset*. (2) With what object was this treatise written? What is its subject, and how treated? (3) Write short biographical notes on:—Antipater Stoicus; Chrysippus Laelius; Zeno. (4) Distinguish between the different schools of Philosophy and Philosophers referred to by Cicero in this treatise.

10. Translate: Cicero, De Imp. Cn. Pomp, chap. 12, §§ 34.36.

What were the political circumstances in which this oration was delivered?

B.A. EXAMINATION FOR HONOURS IN CLASSICS.

LATIN PROSE COMPOSITION.

Examiner,..... .....Rev. George Cornish, M.A., LL.D.

Translate into Latin:—

(A) Thereupon, the herald of the Thirty commanded the officers to arrest Theramenes; and they having entered with their attendants,

Satyrus, the most reckless and profligate of them, leading them, Critias said :—"We deliver over to you Theramenes, who is before you condemned according to the law ; and do you, officers, apprehend and conduct him to prison and complete your duty. On these words, Satyrus dragged him away from the altar, the attendants also dragged him away. Theramenes, as might have been expected, invoked gods and men to look down on what was passing ; but the senate maintained silence, seeing that the men at the bar were also like Satyrus, and that the space in front of the senate-house was full of guards, and also that those present had daggers with them. They conducted the man through the Agora, protesting against his treatment in very loud accents. One saying of his is recorded when Satyrus told him that he would suffer, if he were not silent, he said :—"And if I am silent, shall I not still suffer?" And when he began to drink the hemlock, constrained to die, they report that he said, as he dashed away the last drops, "This to the health of the handsome Critias."

(B) Last, only sixteen years after the driving out of the kings, the plebeians thought that this state of things could not be borne any longer. So they marched out of Rome in a body, and took up a position on a hill a few miles away from the city, and declared that they would found there a new plebeian city, and leave the patricians to live in Rome by themselves. You may imagine the patricians did not like being left in this way, so they sent to the plebeians a wise man, Menenius Agrippa, to persuade them to come back. He told them a fable : "Once upon a time the other members of the body conspired against the belly ; they declared that they had all the work to do, while the belly lay quietly in the middle of the body and enjoyed without any labour everything they brought it. So they all struck work, and agreed to starve the belly into subjection. But while they starved the belly, the whole body began to waste away, and the members found that they were becoming weaker themselves. So you plebeians will find that in trying to starve out the patricians you will ruin yourselves." The plebeians thought there was much truth in this, and they agreed to go back on condition that they might have officers of their own to protect them.

B.A. EXAMINATION FOR HONOURS IN CLASSICS.

HISTORY OF GREECE AND ROME.

Examiner,..... Rev. George Cornish, M.A., LL.D.

1. Into what periods may the history of Greece be divided ?

2. Name the Greek historians who wrote before the time of Herodotus.

3. (*a*) Give the legendary history of the Dorians. (*b*) What is the date assigned to their conquest of the Peloponnesus? (*c*) Distinguish between the Σπαρτιῆται, the Περίοικοι, the Εἵλωτες, the Νεοδαμώδες, and the Μόθωνες, under the government of Sparta. Explain the *κρυπτεία*.

4. *τὸ Ἑλληνικὸν ἐὸν ὅμαιόν τε καὶ ὁμόγλωσσον (ἔχον δὲ) θεῶν ἱδρύματά τε κοινὰ καὶ θυσίας ἤθεά τε ὁπότροκα* (Herod. 8, 144). Comment on this famous passage as to the characteristics of the Greeks.

5. State the causes of the greatness of Athens at the outbreak of the Peloponnesian war. By what policy might her power have been best maintained?

6. Give an account of the *λειτουργίαι* under the Athenian constitution.

7. *τοὺς μὲν ναυμαχήσαντας μίαν καὶ Πλαταιεὶς εὐθὺς εἶναι κἀντὶ δούλων δεσπότας*:—Sketch the historical facts here referred to.

8. What was the cause of the Romans first taking a part in the affairs of Greece?

9. Sketch the political history of Rome down to the time of the Decemvirate.

10. Define the functions and powers of the Consul, Censor, Prætor, and Tribune of the Commons under the Republic. Explain also the terms:—Populus, Plebs, Curia, Comitia Centuria, Patres Conscripti, Quirites.

11. In what ways did the Punic Wars contribute to the extension of the dominion of Rome?

12. The causes of political and social decay that led to the collapse of the Republic.

B.A. EXAMINATION FOR HONOURS IN CLASSICS, 1895.

GENERAL PAPER.

Examiner, ... Rev. George Cornish, M.A., LL.D.

1. (*a*) Discuss the question of the original seat of the Aryan race, noting recently-published views thereupon. (*b*) Name the leading languages of the Aryan family.

2. Give examples of the verbal adjective in Greek. To what does it correspond in Latin? Express by different constructions:—I must do these things, employing the verbal in each.

3. Mention the Greek particles which express :—(1) Emphasis. (2) Irony. (3) Astonishment.

4. (*a*) Compare the earlier and later uses of the Greek Article. (*b*) What classes of nouns may be used *Anarthrous?* (*c*) Classify the various uses of the *Middle Voice* in Greek. How does the Latin provide for the want of the same? (*d*) Are there any traces in Latin of a *Middle Voice* and of an *Aorist Tense?*

5. (*a*) Set forth (1) in Latin, (2) in Greek, the various ways in which purpose can be expressed, using the phrase *He came to see the Army.* (*b*) What does ἀν imply when used with the Historic Tenses of the Indicative?

6. Point out and illustrate what is peculiar in the use of the Infinitive in the following quotations, severally :—(*a*) Pecus egit altos visere montes. (*b*) Fruges consumere nati. (*c*) Quis sibi res gestas Augusti scribere sumit? (*d*) Nil scire tuum est, nisi te scire hoc sciat alter.

7. (*a*) To whom is the system of Greek accentuation attributed? (*b*) Define *Enclitics*, *Proclitics* and *Anastrophe*. (*c*) Give the rules for the accentuation of the Greek verb. Accentuate, with the proper *spiritus*, the following ext. :—

Λιμενες δ' εισι τοις Ταραντινοις προς βορραν ανεμον εκ πιλαγοιν εσπλεοντ δια ισθμου, και τον ισθμον απεκλειον γεφυραις, ων τοτε κρατουντες οι 'Ρωμαιων φρουροι σφισι μεζ εδεχοντο την αγοραν εκ θαλασσμς, Ταραντινοις δ' εκωλνον εσσομιζεσθαι. οθεν ηπορουν αγορας οι Ταραντινοι, εως επελθων ανταις ο Αννιβας εδιδαξε λεωφορον οδον, η δια μεσης της πολεως εφερεν απο των λιμενων επι την νοτιον θαλασσαν, ισθμὸν ετερον ποιησασθαι.

8. Account for the difference of the dialect in the Chorus and Dialogue of Greek Tragedy.

9. What changes in the construction and representation of Attic tragedies are ascribed to Aeschylus, Sophocles and Euripides severally?

10. The origin of Comedy and Tragedy among the Greeks. Give also the etymology of the terms τραγῳδία and κωμῳδία.

MATHEMATICS AND NATURAL PHILOSOPHY.

SESSIONAL EXAMINATIONS, 1895.

FIRST YEAR.

GEOMETRY AND ARITHMETIC.

MONDAY, APRIL 8TH :—MORNING, 9 TO 12.

Examiner,.....ALEX. JOHNSON, M.A., LL.D.

Assistant Examiner,.....H. M. TORY, B.A.

1. Upon a given straight line construct a rectilinear figure similar to a given one and similarly situated. If the words "similarly situated" were omitted, what would be the effect on the construction ?

2. Find a third proportional to two given straight lines.

(*a*) Determine two lines which shall have the same ratio as two given squares, giving the necessary proof.

3. Describe a circle passing through three given points. Can this be done always?

(*a*) If the points be equidistant and 10 feet apart, find the radius of the circle.

4. The angles in a segment of a circle greater than a semi-circle must be acute.

5. If the mass of the earth be 80 times the mass of the moon, and the radius of the earth four times the radius of the moon (both considered as spheres), and if the weight of a man placed on either the earth or the moon be directly proportional to the mass on which he is placed, and inversely proportional to the square of its radius, find the weight of a man on the moon who weighs 150 lbs. on the earth.

6. Reduce the circulating decimal .565656 to a vulgar fraction; and verify your answer.

7. The angle at the centre of a circle is double of the angle at the circumference standing on the same arc.

(*a*) Two tangents AB, AC are drawn to a circle; D is any point on the circumference outside the triangle of ABC; shew that the sum of the angles ABD and ACD is constant.

8. Describe an isosceles triangle having each of the angles at the base double of the vertical angle. Assuming the length of the side to be unity, calculate the length of the base.

9. If four straight lines be proportionals, the rectangle contained by the extremes is equal to the rectangle contained by the means.

10. In a right-angled triangle if a perpendicular drawn from the right angle to the base, the triangles on each side of it are similar to the whole triangle, and to one another.

(*a*) Show that the perpendicular is a mean proportional between the segments of the base.

11. Find the present worth of $7,000 due 3 years hence, interest being at 5 per cent. simple interest.

12. Express a yard as the decimal of a metre, and a square yard as the decimal of a square metre.

SESSIONAL EXAMINATIONS.

FIRST YEAR.

TRIGONOMETRY—ALGEBRA.

TUESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, M.A., LL.D.
Assistant Examiner,.....H. M. TORY, B.A.

1. Prove that $\sin 1'' = \frac{1}{206265}$ nearly.

2. Trace the changes of sign of the cosine as the angle increases from 0° to 360°.

(*a*) Find the relation between the cosine of an angle and the cosine of its supplement.

3. Prove that the area of any triangle is equal to

$$\sqrt{s\,(s-a)\;\;(s-b)\;\;(s-c)}$$

4. Find the highest common factor (or G.C.M.) of $x^3 + x^2 - 2$ and $x^3 + 2x^2 - 3$.

5. Solve the equations :—

(1) $\sqrt{2x+9} - \sqrt{x-4} = \sqrt{x+1}$;

(2) $\dfrac{x-b}{x-a} - \dfrac{x-a}{x-b} = \dfrac{2(a-b)}{x-a-b}$

(3) $ax^2 + bx + c = 0$

6. Divide $x^{\frac{3}{2}} - xy^{\frac{1}{2}} + x^{\frac{1}{2}}y - y^{\frac{3}{2}}$ by $x^{\frac{1}{2}} - y^{\frac{1}{2}}$

7. Find the value of the unit of circular measure in degrees. Reduce 10^c to Radians and .3 Radians to degrees.

8. Express the cosine, tangent, cotangent and secant of an angle in terms of the sine.

9. Prove the following relations :—

(*a*) $\sin(A+B) = \sin A \cos B + \cos A \sin B$

(*b*) $\sin 75^0 = \dfrac{\sqrt{3}+1}{2\sqrt{2}}$

(*c*) $\dfrac{1+\cot^2 A}{2\cot A} = \operatorname{cosec} 2A$

(*d*) $\dfrac{\cos 9^0 + \sin 9^0}{\cos 9^0 - \sin 9^0} = \tan 54^0$

10. In any triangle show that

(1) $\sin\dfrac{A}{2} = \sqrt{\dfrac{(s-b)(s-c)}{bc}}$ where $s = \dfrac{a+b+c}{2}$

(2) $\cos\dfrac{A}{2} = \sqrt{\dfrac{s(s-a)}{2}}$.

and in a right angled triangle (right angle at C) show that

$$\cos\frac{B}{2} = \sqrt{\frac{a+c}{2c}}$$

11. Solve the following equations :—

(*a*) $\dfrac{x+3}{5} - \dfrac{6-x}{10} = \dfrac{x-7}{10}$

(*b*) $(x-1)(x-2) + (x-2)(x-3) + (x-3)(x-1) = 11$

(*c*) $x - 7 = 10, \quad x^2 + y^2 = 58$

12. Simplify (1) $\sqrt{10} \times \sqrt[3]{200}$

(2) $\dfrac{3+\sqrt{5}}{3-\sqrt{5}}$

INTERMEDIATE EXAMINATION.

GEOMETRY AND ARITHMETIC.

MONDAY, APRIL 8TH :—MORNING, 9 TO 12.

Examiners, ... { ALEXANDER JOHNSON, M.A., LL.D.
JOHN COX, M.A.
H. WALTERS, B.A.

Assistant Examiner, ... H. M. TORY, B.A.

1. Four magnitudes are proportional according to Euclid's definition, prove that they are proportional also according to the algebraical definition. Apply Euclid's definition to prove that in any circle, angles at the centre are in the same ratio as the arcs on which they stand.

(*a*) How is this proposition employed to measure any angle numeri cally.

2. In a given circle inscribe a regular quindecagon.

3. The diameter of a circle is 10 inches long, find the distance apart of two parallel chords which are respectively 6 and 8 inches long.

4. If the distance of the centres of the Earth and Moon be 240,000 miles, find the position of a point which cuts the line joining the centres in the ratio of 1 to 81.

5. Describe about a given circle a triangle equiangular to a given triangle.

The angles of the triangle formed by joining the points of contact of the inscribed circle of a triangle with the sides are equal to the halves of the supplements of the corresponding angles of the original triangle.

6. Define similar arcs of circles.

Two ares of circles which have a common chord cannot be similar unless they are coincident.

Prove that if two circles have three points in common, the circles are coincident.

7. Find a mean proportional between two given straight lines.

8. The value of π is 3.14159. Find the error in calculating $\frac{1}{\pi}$ by the following rule :—"Divide 7 by 11 and then by 2, and add $\frac{1}{3}$th of $\frac{1}{1000}$th of the result." Find also the *percentage* error.

9. If the vertical angle of a triangle be besected by a straight line which also cuts the base, the segments of the base shall have to one another the same ratio as the sides of the triangles.

10. Define compound ratio; and prove that if two parallelograms have one angle of the one equal to one angle of the other, their areas are to one another in the ratio compounded of the ratios of the sides containing these angles.

11. If from any point without a circle two straight lines be drawn, one of which cuts the circle and the other touches it, the rectangle contained by the whole line which cuts the circle, and the part of it without the circle, shall be equal to the square on the line which touches it.

(*a*) If two circles cut each other, the tangents drawn from any point in the common chord produced are equal.

12. What is the distance measured through the centre of a cube from one corner to the opposite corner, the side of the cube being 3 feet?

INTERMEDIATE EXAMINATION.

TRIGONOMETRY—ALGEBRA.

TUESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON M.A., LL.D.
JOHN COX, M.A.
H. WALTERS, B.A.

Assistant Examiner,..... H. M. TORY, B.A.

(1) Define a logarithm. State and prove the logarithmic rules by which multiplication, division, involution and evolution are changed into simpler arithmetical processes.

(2) The sides of a right-angled triangle are 3 and 4 feet long, find the remaining angles by the logarithmic method.

(3) To find the distance from a point A on one side of a river to a point C on the opposite side, a second station B is taken whose distance from A is found to be 450 yards; the angle BAC is 53° and the angle ABC is 60°; find the side AC.

(4) Prove $\sin A + \sin B = 2 \sin \frac{1}{2}(A+B) \cos \frac{1}{2}(A-B)$, and find the corresponding value for $\sin A - \sin B$. Thence prove that in any triangle $\frac{a+b}{a-b} = \frac{\text{Tan } \frac{1}{2}(A+B)}{\text{Tan } \frac{1}{2}(A-B)}$

5. Simplify

(*a*) $\dfrac{\left(\dfrac{b^2}{a^2+c^2} + \dfrac{c^2}{b^2-c^2}\right)(b^2+c^2)^2}{\dfrac{b}{b-c} - \dfrac{c}{b+c}}$

(*b*) $\sqrt{\{4x^4 + 2bx^3 - (4a - \frac{1}{4}b)bx^2 - ab^2x + a^2b^2\}}$

(*c*) $a^{\frac{3}{4}(\frac{4}{5}+\frac{5}{6})} \div a^{\frac{4}{3}(\frac{5}{4}+\frac{6}{5})}$

6. Define *logarithm, characteristic, mantissa.*

Having given $\log_{10} 3 = .4771213$, find how many digits there are in 3^{100}.

7. Find in degrees, etc., an angle whose circular measure is $1{\cdot}2$.

A circular target at a distance a subtends an angle of 30 minutes. Show that its area is $\dfrac{\pi^3 a^2}{(720)^2}$ very nearly.

8. Prove the formulae

(1) $\sin(A+B) = \sin A \cos B + \cos A \sin B$.

(2) $\dfrac{1 - \tan^2 A \tan^2 B}{\tan^2 A \tan^2 B} = \dfrac{\cos^2 A - \sin^2 B}{\sin^2 A \,.\, \sin^2 B}$.

(3) $\dfrac{\sin^2 2A - 4\sin^2 A}{\sin^2 2A + 4\sin^2 A - 4} = \tan^4 A$.

(1) Prove that in any triangle $\cos A = \dfrac{b^2+c^2-a^2}{2bc}$

Find the expression for sin A, and deduce the expression of the area of a triangle in terms of the sides.

(2) Standing on the top of a mountain, I observe that the angle which a pillar, 220 feet in height, subtends at my eye is $1°.12'$ and that the depression of its top is $12°.30'$; what is the distance of the pillar and the height of the mountain?

(3) Solve the equations:—

(*a*) $\dfrac{x-1}{3} - \dfrac{x-3}{5} = 7 + \dfrac{x+2}{6}$

(*b*) $x + 3 = \sqrt{6x+3}$

(*c*) $x + y = 2a$; $x^2 + y^2 = 2a^2$

4. (*a*) What number exceeds its squares root by 156?

(*b*) Show that the difference between the squares of any two consecutive numbers is equal to one more than twice the smaller.

SESSIONAL EXAMINATION.

THIRD YEAR.

MECHANICS—HYDROSTATICS.

TUESDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiners,..... A. JOHNSON, M.A., LL.D. / JOHN COX, M.A.

1. What is meant by *uniform* acceleration, If v be the velocity at the time t of a body, which, starting from rest, is uniformly accelerated, prove the equations $s = \frac{vt}{2}$: $v^2 = 2fs$: defining f.

2. State and prove the principle of equilibrium in the lever.

a. A straight lever with the fulcrum at one end has one arm 4 feet longer than the other; if the power be 9 times the weight (both being at right angles to the lever) find the length of the lever.

3. Distinguish between *mass* and *weight*. What limitation or modification is there to the general statement that the weight is proportional to the mass? Illustrate by examples. What is the nature of the proof of the general statement?

a. A weight of 100 lbs. is placed on a smooth table, and is attached by a string which passes horizontally over a pulley at the end of the table to a weight of 10 lbs. hanging vertically. Apply the second law of motion to find the velocity of the system at the end of one second. Find also the tension of the string.

4. A mass of cast-iron (sp. gr. = 7.25) weighing 100 lbs. in air is immersed in water. Find how much of its weight it will lose.

5. State Boyle and Marriott's law for the elastic force of a given mass of gas, and describe the method of proof.

6. If the weight of 100 cubic inches of dry air at the temperature 60° Fah. and the pressure 30 inches be 31.0117 grams, find the weight of the air in a room 30 feet long, 20 wide and 14 feet high, if the temperature be 65° Fah. and the barometer be 30.5.

7. Find the resultant of two parallel forces acting in the same direction. Define the centre of gravity of a body, and find that of a set of weights 1, 2, 4, 8, 16 lbs. placed in a straight line at equal intervals of 1 foot.

8. An engine draws a train of 120 tons up an incline of 1 in 150 at the

rate of 15 miles per hour. If the resistances to motion are 16 lbs. per ton, how many foot pounds of work are done per second (*a*) in lifting the train, (*b*) in destroying the resistances? What is the total horse power exerted?

9. A mass of 500 lbs. falls freely for half a second on the head of a pile. Find the energy in foot poundals when it strikes the pile. If the pile is driven in $\frac{1}{4}$ inch by the blow, find the average pressure exerted in pounds.

10. Find the tension of a string by which a mass of 10 lbs. is being whirled round uniformly in a circle of radius 3 feet twice per second.

11. Describe briefly (*a*) Nicholson's Hydrometer, (*b*) the specific gravity bottle, pointing out the use of each.

12. A cylindrical diving bell 10 feet high is submerged till the water rises 3 feet in the bell. If the water barometer stand at 34 feet, find the depth of water above the top of the bell.

SESSIONAL EXAMINATIONS.

THIRD YEAR.

ASTRONOMY—OPTICS.

TUESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiners, ... { ALEXANDER JOHNSON, M.A., LL.D.
JOHN COX, M.A.

1. The Sun with the whole solar system is said to be travelling towards the constellation Hercules at the rate of four miles in a second. Explain by illustration the principle of the method employed in coming to this conclusion.

2. Give a general explanation of the causes of the seasons.

3. Describe first and then explain the phases of the Moon.

4. The flame of a candle is placed on the axis of a convex lens and 13 inches distant from it. The focal length of the lens is 12 inches. Find: (*a*) where a screen should be placed to receive the image.

(*b*) The magnitude of the image. What would happen if the candle were only 11 inches from the lens?

5. State the laws of reflection of light, and explain how they are proved.

6. Describe the astronomical telescope, and find its magnifying power.

7. Prove that if D and d be the distances from a concave mirror of a point of light and its image, and r the radius,

$$\frac{1}{d} - \frac{1}{D} = \frac{2}{r}$$

An arrow 2 feet long is placed vertically in front of a concave mirror of radius 10 feet at a distance of 15 feet. Find the position and magnitude of the image, and in a diagram trace a pencil of rays from the top of the arrow to its image.

8. Prove that the deviation produced by a prism of small angle e is given by

$$\delta = (\mu - 1)\ e.$$

9. Point out the functions of the objective and eye-piece in an ordinary microscope. If the objective has a focal length of $\frac{1}{16}$ of an inch, and forms an image at the distance of 9 inches, and the eye-piece has a focal length of $\frac{1}{3}$ inch, and is focussed for an eye which sees distinctly at 10 inches distance, what is the magnifying power of the instrument?

10. What is meant by irrationality of dispersion? Explain in general terms how it is possible to construct an achromatic object-glass.

11. What different types of (*a*) double stars, (*b*) nebulæ are found in the heavens? Name examples if possible.

12. On what grounds do we believe (*a*) the Earth, (*b*) the Sun to rotate on their axes?

B.A. ORDINARY EXAMINATIONS.

MECHANICS—HYDROSTATICS.

MONDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiners,..... { ALEX. JOHNSON, M.A., LL.D.
JOHN COX, M.A.

1. If three forces P, Q, R, meeting in a point O, be in equilibrium, prove that $P : Q :: \sin QOR : \sin POR$.

2. A weight of 10 lbs. is kept in equilibrium on a smooth inclined plane (angle of inclination $=30°$), by a horizontal force; find the magnitude of the force and the pressure on the plane.

3. Assuming that the Moon revolves round the Earth in $27\frac{1}{3}$ days, and that her distance is 60 times the radius of the Earth; calculate the force which retains her in her orbit, the radius of the Earth being 4,000 miles.

(*a*) Compare this with the force of gravity at the distance of the M oon the acceleration due to gravity at the Earth's surface being 32.2.

4. Find the magnitude of the force which causes a liquid to descend from one vessel to another through the longer leg of a siphon.

5. Explain the method of finding a specific gravity by the Hydrostatic, Balance. (*a*) Investigate a formula when the substance is light enough to float in the water.

(*b*) Find the specific gravity of a sovereign whose weight is 123.02 grs. and which weighs in water 116.02 grs.

6. In the suction pump, show that the effective pressure on the piston is equal to the weight of the water-column whose base is the area of the piston, and whose height is the height of the water on the pump above the level of the well.

7. A cylindrical projectile whose base has a diameter of 10 inches weighs 2,000 lbs; it is fired vertically upwards from a gun, travelling 16 feet before it leaves the muzzle. The average pressure exerted on it by the explosion is 62,500 lbs. per square inch. Find in foot pounds the energy of the shot when it leaves the gun. Find also the height to which it will rise.

8. State and prove the principle of the lever when the forces are perpendicular to the lever.

A uniform heavy rod having a 10 lb. weight at one end balances about a point 4 feet from that end, and if the 10 lb. weight be replaced by a 5 lb. weight, the fulcrum has to be moved 1 foot. Find the length and weight of the rod.

9. A balloon with its contents and appendages weighs 3,200 lbs., and the air it displaces weighs 3,600 lbs. Neglecting the resistance of the air, find

(*a*) The lifting force on the balloon.

(*b*) Its upward acceleration.

(*c*) The time it takes to rise 100 feet.

10. Find the time of swing of a pendulum of length l, where gravity has the value g.

If $g = 32.2$, find the length of a pendulum which will swing 50 times in 2 minutes, 41 seconds.

11. A body weighing 300 grammes and of specific gravity 5 has 100 grammes of another substance attached to it, and the joint weight of the two in water is 300 grammes. Find the specific gravity of the attached weight.

12. A cubic metre of air at 0° *C* and 760 mm. pressure weighs 1293. gms. Find the weight of the air in a room 12 metres by 6 metres by 5 metres, at a temperature of 16° *C* and pressure 779 mm.

N.B.—The following may be answered *instead* of questions 3 and 10, if preferred.

3. (*a*) Find expressions for the range and time of flight of a projectile, when the velocity and angle of projection are given.

If the velocity of projection be that due to a vertical fall from a height *a*, and *h* be the greatest height attained by the projectile, then the horizontal range will be $= 4\sqrt{ah - h^2}$.

10. (*a*) In the case of the direct collision of bodies, explain how each of the equations

$$Mv + Mv^1 = Mu + Mu^1.$$
$$v - v^1 = -e(u - u^1)$$

is arrived at.

Two balls ($e = \frac{5}{6}$) of 4 oz and 6 oz weight with velocities of 5 and 3 feet per second *meet* each other directly. Find the velocities after impact.

B.A. ORDINARY EXAMINATIONS.

ASTRONOMY—OPTICS.

TUESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiners,..... { ALEX. JOHNSON, M.A., LL.D.
JOHN COX, M.A.

1. (*a*) Assuming that the mean diameter of the Sun as seen from the Earth is 1923″ and that the mean diameter of the Earth as seen from the Sun is 17″; prove that the length of the Earth's shadow is 216.4 times the radius of the Earth.

(*b*) Prove that half the angle subtended at the Earth by the section of her shadow made at the distance of the Moon is equal to the sum of the parallaxes of the Sun and Moon minus the Sun's semi-diameter.

2. Explain one method of finding the latitude of a place on the Earth's surface.

3. If *M* and *E* be the periodic times of Mars and the earth, and *T* be the interval from opposition to opposition, prove that

$$M = \frac{TE}{T - E}$$

4. State and prove the principle on which Hadley's sextant is constructed.

5. Find the magnifying power of a refracting astronomical telescope whose object-glass is of 10 feet focal length, and eye-glass of $\frac{1}{2}$ inch, used by a person whose least distance of distinct vision is 3 inches.

6. State the laws of refraction, and explain how they are proved.

(*a*) If a ray of light be incident upon glass at an angle of 60°, find the angle of refraction, the refractive index being $\frac{3}{2}$.

7. Shew that for refraction at a plane surface

$$d = \mu D.$$

A black spot on a sheet of paper is looked at through a sheet of glass of 1 inch thickness laid on the paper. If $\mu = \frac{3}{2}$ for glass, find how much the spot appears to be lifted above the paper.

8. Prove the formula for refraction through a lens

$$\frac{1}{d} - \frac{1}{D} = \frac{1}{f}$$

A double convex lens has surfaces of 6 inches and 4 inches radius, and a refractive index 1.42. Find its focal length.

9. A convex lens of 6 inches focal length is used to throw an image of a lantern slide ($3\frac{1}{4}$ inches square) upon a screen distant 40 feet from the slide. How far from the slide must the lens be placed? How large will the image be?

10. Explain the phrase "dispersive power," and show how it is measured. How is it possible to construct an achromatic objective?

11. Define *sidereal* and *mean* time. What are the causes of the "Equation of Time"? When is it zero?

12. Show how the mass of a planet is compared with that of the Sun when it has a satellite.

HONOUR EXAMINATIONS IN MATHEMATICS.

FIRST YEAR.

GEOMETRY.—(*First Paper.*)

FRIDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.
Assistant Examiner, ... H. M. TORY, B.A.

1. If the three perpendiculars of a triangle intersect in O and (produced if necessary) meet the circumscribed circle in G, H, and K, prove that the distances OG, OH and OK are bisected by the sides of the triangle.

2. If two triangles be on equal bases and between the same parallels, the two sides of each triangle intercept equal segments on any straight line parallel to the base.

3. The circles circumscribing the four triangles formed by four intersecting straight lines all pass through the same point, and this point and the four centres lie on the same circumference.

4. Given base, difference of base angles and area, construct the triangle.

5. Given the bases of two triangles which have a common vertex, in magnitude and position, and the sum of their areas, find the locus of the common vertex.

6. AB is a fixed chord of a circle, and AC is a moveable chord passing through A, if the parallelogram CB be completed, find the locus of the intersection of its diagonals.

7. To describe a circle passing through a given point, and touching a given straight line and a given circle, the circle and point lying on the same side of the straight line.

8. If two circles be described passing through two given points and cutting a given circle, the chords of intersection all pass through a fixed point on a straight line passing through the two given points or are parallel to this line.

9. If a quadrilateral be inscribed in a circle and the figure completed, the square on the third diagonal is equal to the sum of the squares on the two tangents from its extremities, and the tangents from the middle point of the third diagonal are each equal to half the diagonal.

10. If perpendiculars be drawn from the extremities of each diagonal of any quadrilateral to the other diagonal, the sum of the perpendiculars on the first diagonal is to the sum of the perpendicular or the second diagonal, as the second diagonal is to the first.

11. Three times the sum of the squares on the sides of a triangle is equal to four times the sum of the squares on the bisectors of the sides.

12. Given the three bisectors of the sides of a triangle; construct it.

HONOUR EXAMINATIONS.

FIRST YEAR—GEOMETRY (*Second Paper.*)

FRIDAY, APRIL 19TH :—AFTERNOON, 2 TO 5.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.
Assistant Examiner, ... H. M. TORY, B.A.

1. Given any three rays of an anharmonic pencil and the anharmonic ratio; find the fourth ray, its relative position being given.

2. If, through a given point without any number of straight lines, a transversal be drawn and a point taken on it, such that the reciprocal of its distance from the given point is equal to the sum of the reciprocals of the intercepts between the given point and the given lines, find the locus of the point of section.

3. Given four points A, B, B′, A′, in a straight line; find the locus of a point at which A B and B′ A′ shall subtend equal angles.

4. If through any fixed point, any number of chords of a given circle be drawn and tangents be drawn at the extremities of each chord, the locus of the intersection of these tangents is a straight line.

5. Given the base and difference of the sides of a triangle, the polar of the vertex with respect to one extremity of the base as origin always touches a fixed circle.

6. Any straight line drawn through a point is cut harmonically by the point, its polar with regard to a given circle, and the circumference of the circle.

7. If a transversal cut the sides of a triangle, the segments of any side are in a ratio compounded of the ratios of the segments of the other two sides.

8. Any quadrilateral is divided by a straight line into two others; prove that the intersections of the diagonals of the three lie in a straight line,

9. Inscribe in a given polygon another of the same number of sides so that each of its sides shall pass through a given point.

10. If a variable circle touch two fixed circles, the chord of contact passes through their external centre of similitude when the contacts are of the same kind, and through their internal centre when the contacts are of different kinds.

11. If a point move along a fixed straight line, its polar always passes through a fixed point, viz., the pole of the fixed line; and if a straight

line always pass through a fixed point, its pole always lies on a fixed straight line, viz., the polar of the fixed point.

12. The three perpendiculars of a triangle meet in the same point. By *reciprocating* this theorem, deduce the following:

If any point whatever be joined to the vertices of a triangle, and perpendiculars drawn to those joining lines, they will meet the sides opposite to the corresponding vertices in three points in the same straight line.

HONOUR EXAMINATION.

FIRST YEAR.

THEORY OF EQUATIONS—ALGEBRA.

Examiner,.....ALEX. JOHNSON, M.A., LL.D.

Assistant Examiner,.....H. M. TORY, B.A.

1. Investigate Cardan's method of solving cubic equations.

(*a*) Apply it to the equation

$$x^3 - 15x = 126$$

2. If the expressions $f(a)$ and $f(b)$ have contrary signs, an odd number of roots of $f(x) = 0$ will lie between a and b; and if $f(a)$ and $f(b)$ have the same sign, either no root or an even number of roots will lie between a and b.

3. Solve the following equation of which two roots are equal:

$$4x^3 + 20x^2 - 23x + 6 = 0$$

4. Prove every equation of an odd degree has at least one real root.

5. Break up $\dfrac{23x - 11x^2}{(2x-1)(9-x^2)}$ into partial fractions.

6. Find by the method of Indeterminate Coefficients the sum of

$$1^2 + 3^2 + 5^2 + 7^2 + \text{etc., to } n \text{ terms.}$$

7. If an equation $f(x) = 0$, whose coefficients are all real quantities, have for a root the imaginary expression $a + b\sqrt{-1}$, it must also have for a root the conjugate imaginary expression $a - b\sqrt{-1}$.

8. Solve the equation $x^4 + 2x^3 - 21x^2 - 22x + 40 = 0$, whose roots are in arithmetical progression.

9. Solve the equation $x^5 - 1 = 0$.

Transform the equation $x^4 + 8x^3 + x - 5 = 0$ into one whose roots shall be the reciprocals of the roots of the given equation.

10. A positive root of the equation $x^3 + x^2 + x - 100$ lies between 4 and 5; find its value to three places of decimals.

11. Prove that $a^x = 1 + (x \log_e a) + \frac{(x \log_e a)^2}{2} + \&c.$

12. Expand to four terms the expression $\left(1 + \frac{x}{3}\right)^{-3}$

Prove the Binomial Theorem when the index is negative.

HONOUR EXAMINATION.

SECOND YEAR.

ANALYTICAL GEOMETRY (*First Paper*).

FRIDAY, APRIL 19TH, 1895:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.

1. Find the co-ordinates of the extremities of a diameter of an ellipse $\frac{x^2}{a^2} + \frac{y}{b^2} = 1$, conjugate to the diameter passing through the point $x' y'$ on the curve.

(*a*) Prove that the sum of the squares of any pair of conjugate diameters is constant.

2. If a parallelogram be circumscribed to an ellipse, so that its sides are parallel to a pair of conjugate diameters, prove that its area is constant.

3. Prove that the equation of an hyperbola referred to the asymptotes as axes is $x y = \frac{a^2 + b^2}{4}$

4. If tangents to a parabola be drawn at the vertex (V) and at any point (P) on the curve, intersecting at the point R_1 and if the focus be joined to R_1 V_1 and P_1 prove that FR is a mean proportional between FV and FP.

5. Find the polar equation of the ellipse or parabola, the focus being the pole.

6. If through a fixed point O, any chord of a circle be drawn, and OQ be taken an arithmetical mean between the segments OP and OP' find the locus of Q.

7. Find the radius and centre of $4x^2 + 4y^2 + 4x - 8y + 3 = 0$

8. Find the locus of a point the sum of the squares of whose distances from the four sides of a square is constant.

9. Verify that the following equation represents right lines and find the lines:

$$x^2 - 5\,x\,y + 4\,y^2 + x + 2\,y - 2 = 0$$

10. Four given lines OA, OB, OC, OD, meet in a point; a line parallel to OD is drawn across the other three, cutting them in points A', B', C', find the locus of a point P on it such that $PA^2 = PB' \cdot PC'$.

11. Prove analytically that the three perpendiculars of a triangle meet in a point.

12. Find the equation of the line joining the point 2, 3, to the intersection of $2\,x + 3\,y + 1 = 0$, $3\,x - 4\,y - 5 = 0$.

HONOUR EXAMINATIONS.

SECOND YEAR.

ANALYTICAL GEOMETRY.—(*Second Paper.*)

FRIDAY, APRIL 19TH:—2 TO 5 P.M.

Examiner,..... .... ALEXANDER JOHNSON, M.A., LL.D.

1. Prove that the radius of curvature at any point of a central conic $= \dfrac{b'^3}{ab}$

2. Two conics will be similar and similarly placed, if the coefficients of the highest powers of the variables are the same in both or differ only by a constant multiplier.

3. Find the locus of the foot of the perpendicular from the focus of a parabola on the normal.

4. Given base and sum of sides of a triangle, find the locus of the intersection of the bisectors of the sides.

5. The rectangles under the segments of two chords of a conic which intersect are to each other as the squares of the diameters parallel to those chords.

6. Through any given point can, in general, be drawn one chord of a conic, which will be bisected at that point.

7. Find the equation of the circle circumscribing the triangle formed by the lines $\alpha = 0$, $\beta = 0$, $\gamma = 0$.

8. Show that the equation of a parallel to the base of a triangle drawn through the vertex is $a \sin A + \beta \sin B = 0$.

9. Given the three lines α, β, γ, forming a triangle, the equation of any right line $Ax + By + C = 0$, can be thrown into the form

$$l\alpha + m\beta + n\gamma = 0$$

10. Find the equation of the tangent at any point to a conic given by the general equation.

11. Transform the equation $x^2 + 2xy - y^2 + 8x + 4y - 8 = 0$ to the centre as origin.

12. State and prove the principle of the instrument for describing an ellipse called the elliptic compasses.

——

HONOUR EXAMINATIONS.

SECOND YEAR—CALCULUS.

MONDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.

1. Find when $4x^3 - 15x^2 + 12x - 1$ is a maximum or a minimum.

2. Find the value of $\left(\frac{\sin nx}{x}\right)^m$ when $x = 0$. Prove the truth of the method you employ.

3. Expand $\cos x$ by MacLaurin's Theorem.

4. Prove Leibnitz's Theorem.

$$\frac{d^n(uv)}{dx^n} = \frac{ud^nv}{dx^n} + n\frac{du}{dx}\frac{d^nv^{-1}}{dx^{n-1}} + \text{etc.}$$

5. Illustrate geometrically the distinction between infinitesimals of the first, second and third orders.

6. Differentiate

$$y = e^{x^x} \tan^{-1} x : \quad y = \log \tan x : \quad y = \sin^{-1} \frac{1 - x^2}{1 + x^2}$$

7. Integrate

$$\int \frac{dx}{x \log x}; \quad \int \frac{dx}{1 + x + x^2}; \quad \int \frac{dx}{x\sqrt{x^2 - a^2}}$$

8. Integrate

$$\int x^n \log x \, dx; \quad \int \frac{dx}{x^2 (x^2 - 1)^{\frac{1}{2}}}; \quad \int \frac{dx}{x^2 (1 + x^2)}$$

9. Classify the methods for the reduction of the integration of functions to the fundamental formulæ, giving an example of each as an illustration.

10. Investigate some one method for rationalizing the expression

$$\frac{f(x)}{\phi(x)} \quad \frac{dx}{\sqrt{a + 2bx + cx^2}}$$

HONOUR EXAMINATIONS.

SECOND YEAR—TRIGONOMETRY.

MONDAY, APRIL 22ND:—AFTERNOON, 2 TO 5.

Examiner,..... .....ALEXANDER JOHNSON, M.A., LL.D.

1. Prove Lhuillier's formula for finding the area of a spherical triangle when three sides are given

$$\tan \tfrac{1}{4} E = \sqrt{\tan \tfrac{1}{2} s \tan \tfrac{1}{2} (s-a) \tan \tfrac{1}{2} (s-b) \tan \tfrac{1}{2} (s-c)}$$

2. In a spherical triangle prove

$$\sin \tfrac{1}{2} A = \sqrt{\frac{\sin (s-b) \sin (s-c)}{\sin b \sin c}}$$

(*a*) Deduce from this the corresponding formula for the supplemental triangle.

3. (*a*) Find the length of the arc of a parallel of latitude in terms of the latitude and the corresponding arc at the equator.

(*b*) Prove that the angle between a parallel of latitude and a secondary to the equator is a right angle.

4. If A be the area of any figure on the surface of a sphere whose radius is r, show that the measure of the solid angle it subtends at the centre is $\frac{A}{r^2}$.

(*a*) If O be a point inside any closed surface, show that the sum of all the solid angles subtended at O by the elements of the surface is 4π.

5. The three sides of a spherical triangle are $a = 108° 14'$, $b = 75° 29'$, $c = 56° 37'$; find the angle C.

6. In a right-angled spherical triangle the two sides are 76° 25′ 30″ and 45° 50′ 22″; find the angle opposite the longer side.

7. Calculate the value of π to 4 places of decimals by any method.

8. Prove Demoivre's Theorem for a fractional index.

9. Prove that if m be odd

$$2^m \cos^m \theta = 2 \cos m\theta + 2m \cos (m-2)\theta + 2 \frac{m(m-1)}{1 \cdot 2} \cos (m-4)\theta + \text{etc., to } \tfrac{1}{2}(m+1) \text{ terms.}$$

10. State and prove the rule for converting Napierian logarithms into Brigg's logarithms.

B.A. HONOURS IN MATHEMATICS AND NATURAL PHILOSOPHY.

WEDNESDAY, APRIL 3RD :—MORNING, 9 TO 12.

LUNAR THEORY.

Examiner,.....ALEXANDER JOHNSON, M.A., LL.D.

1. State the object of the Lunar Theory, and give an explanation of the method of investigation in the text-book, pointing out the principal steps.

2. Define the plane of the ecliptic, and show that the sun's latitude will always be less than 1″.

3. Investigate the differential equation of the moon's radius vector

$$\frac{d^2u}{d\theta^2} + u = \frac{\frac{P}{h^2u^2} - \frac{T}{h^2u^3}\frac{du}{d\theta}}{1 + 2\int \frac{T}{h^2u^3}\, d\theta}$$

4. Describe the process of integration of the differential equations of the moon's motion, noticing any caution to be observed; and investigate the rule for the retention of terms of the higher orders when seeking an approximate solution of the equations to any given order.

5. Assuming

$$\frac{d^2s}{d\theta^2} + s = -\tfrac{3}{2} m^2 k \sin. (g\theta - \gamma) + \tfrac{3}{2} m^2 k \sin. \{(2 - 2m - g)\theta - 2\beta + \gamma\}$$

find the value of s.

6. Examine the physical meaning of the first term in the expansion of s, and show how to calculate the period.

7. Give Newton's investigation for determining the difference of the forces by which a body is retained in a movable central orbit and in the same orbit fixed.

(a) Investigate this analytically.

8. Show in Newton's manner that the lunar months are longer in winter than in summer.

B.A. AND THIRD YEAR HONOUR EXAMINATIONS.

MATHEMATICS AND NATURAL PHILOSOPHY.

ASTRONOMY.

THURSDAY, APRIL 11TH:—2 TO 5 P.M.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.

1. Investigate a formula for determining the time of any particular phase of an eclipse of the moon.

a. Calculate the beginning, middle and end (for the shadow only) of an eclipse of the moon from the following data:—

Time of opposition,	$12^h\ 6^m\ 12^s$
Latitude of moon at opposition,	38′ 42″ N.
Moon's horary motion in latitude,	— 3′ 26″ (lat. decreasing).
" " " longitude,	37′ 23″
Sun's " " "	2′ 29″
Moon's semi-diameter,	16 39
Semi-diameter of shadow,	46′ 44″

2. In the Nautical Almanac the data for an eclipse are given, not by means of the latitude and longitude, but by the declination and right ascension; show that the investigation of the method of calculation will be similar; the motion in $R.A.$ being multiplied by the cosine of half the sum of the declinations of the centres of the moon and shadow, and the motion of the shadow in declination being taken into account.

3. Prove that the effect of the moon in producing Tides is about $2\frac{1}{3}$ times as great as the Sun's.

4. If the figure of the Earth be an oblate spheroid, and $c = \frac{a - b}{a}$ prove that the distance r from the centre of a point on the surface whose geographica latitude is A is

$$r = a \quad - c \sin {}^2A)$$

5. Investigate a formula for determining the time of year when the wilight is shotters.

6. If u be eccentric anomaly, prove the relations between it and the mean and the true anomalies, viz:

$$nt = u - e \sin u$$

$$\tan \frac{\theta}{2} = \sqrt{\frac{1+e}{1-e}} \tan \frac{u}{2}$$

7. From the two equations in the previous question, eliminate u by Lagrange's Theorem (state this theorem), and prove that

$$\theta = nt + 2\, e \sin nt + \tfrac{5}{4}\, e^2 \sin 2\, nt + \frac{e^3}{12} (13 \sin 3\, nt - 3 \sin nt)$$

8. Give Flamsteed's method for determining the instant when the sun is in the first point of Aries.

9. The R.A. and Dec. of a star are respectively 5h. 5m. 42.03s. and 45° 50′ 22″. 4 N., find its latitude and longitude, the obliquity of the ecliptic being 23° 27′ 25″. 47.

10. At a place in lat. 52° 13′ 26″ N at 3h. 21m. 13.4s. P.M. by the clock, the corrected zenith distance of the sun's centre was found to be 75° 16′ 15″, when the declination was 9° 33′ 30″ S.; find the correction of the clock.

B.A. AND THIRD YEAR HONOUR EXAMINATIONS.

MATHEMATICS AND NATURAL PHILOSOPHY.

CALCULUS.

WEDNESDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, M.A., LL.D

(*The first four questions are for* B.A. *Candidates only.*)

1. Integrate by Monge's method

$$\frac{d^2z}{dx^2} - a^2 \frac{d^2z}{dy^2} = 0$$

(*a*) Integrate the same equation by the symbolical method.

2. Find the functional equation from which the following partial differential equation is derived,

$$(mz - my)\, p + (nx - lz)\, q = ly - mx$$

3. If $x = r \cos\theta$ and $y = r \sin\theta$, prove

$$\frac{d^2V}{dx^2} + \frac{d^2V}{dy^2} = \frac{d^2V}{dr^2} + \frac{1}{r}\frac{dV}{dr} + \frac{1}{r^2}\frac{d^2V}{d\theta^2}$$

4. Trace the curve

$$y^2x + ey = ax^3 + bx^2 + cx + d$$

5. Integrate the equation

$$\frac{d^2u}{d\theta^2} + u = a\cos(\theta - \alpha)$$

6. Reduce the equation

$$Axy\left(\frac{dy}{dx}\right)^2 + (x^2 - Ay^2 - B)\frac{dy}{dx} - xy = 0$$

by a suitable transformation to Clairaut's form, and find its solution.

7. Investigate a method for solving homogeneous differential equations of the first order

$$x^n \varphi\left(\frac{y}{x}, p\right) = 0$$

(*a*) Apply it to the equation

$$yp + nx = \sqrt{y^2 + nx^2}\ \sqrt{1 + p^2}$$

8. Find an integrating factor for

$(x^3y - 2y^4)\,dx + (y^3x - 2x^4)\,dy = 0$, and solve the equation.

9. Integrate 1^0 $(x^4 - 4xy - 2y^2)\,dx + (y^2 - 4xy - 2x^2)\,dy = 0$

and 2^0 $x\,dx + y\,dy + \dfrac{x\,dy - y\,dx}{x^2 + y^2} = 0$

10. Show that equations of the form

$$\frac{dy}{an} + Py = Qy^n$$

where P and Q are functions of x, are reducible to a linear form.

11. Investigate a method for finding the asymptotes to a curve of the n^{th} degree.

(*a*) Apply it to the curve $y^3 = ax^2 + x^3$.

12. Show that in the curve

$$y^2(a^2 + x^2) = x^2(a^2 - x^2)$$

the origin is a node, and that the tangents bisect the angles between the axes of co-ordinates.

13. Find the envelope of a righ line when the sum of the squares of the perpendiculars on it from the given points is constant.

B A. HONOUR EXAMINATIONS.

SURFACES.

MATHEMATICS AND NATURAL PHILOSOPHY.

MONDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.

1. Define a *geodesic* line on a surface, and prove that the plane of two consecutive elements of the geodesic contains the normal to the surface.

2. Define lines of curvature on any surface, and find their differential equation.

(*a*) Hence show that the lines of curvature on the ellipsoid $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$ are projected on the plane of xy into a series of conics whose axes a' and b' are connected by the relation.

$$\frac{a'^2\,(a^2 - c^2)}{a^2\,(a^2 - b^2)} + \frac{b'^2\,(b^2 - c^2)}{b^2\,(b^2 - a^2)} = 1$$

3. Find the expression for the value of the principal radii of curvature at any point of a surface, the axes of co-ordinates having any position.

4. Any tangent plane to a surface is intersected by a consecutive tangent plane in the diameter of the indicatrix which is conjugate to the direction in which the consecutive point is taken.

5. Determine the surface generated by a right line which moves parallel to the plane of $(x, y,)$ and passes through the following curves.

$$\frac{x^2}{a^2} + \frac{z^2}{c^2} = 1,\ y = 0:$$

$$\frac{y^2}{b^2} + \frac{z^2}{c^2} = 1,\ x = 0:$$

6. Find the differential equation to the surface generated by a straight line which passes through two given curves and remains parallel to the plane of $x\ y$.

7. Find the equation of the cone enveloping the ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{x^2}{c^2} = 1$$

from the point a, b, c as vertex.

8. The points on an ellipsoid the normals at which intersect the normal at a fixed point lie on a cone of the second order whose vertex is the fixed point.

9. A sphere touches each of two right lines which are inclined to each other at a right angle, but do not meet; show that the locus of its centre is an hyperbolic paraboloid.

10. Given seven points on a quadric, the polar plane of a fixed point passes through a fixed point.

11. Find the equation of the osculating plane at any point of a surface.

12. Through a double point on a surface can be drawn an infinity of right lines which will meet the surface in three coincident points; and these lines form a cone of the second order.

ENGLISH LANGUAGE AND LITERATURE.

FIRST YEAR ENGLISH.

A. LECTURES ON ENGLISH HISTORY AND LITERATURE, 1558-1660.

B. COMUS.

FRIDAY, APRIL 5TH, 1895 :—9 TO 12 A.M.

Examiners,..... } CHAS. E. MOYSE, B.A.
} CHAS. W. COLBY, M.A., PH.D.

A.

1. Indicate the leading characteristics of English prose during the Tudor and early Stuart periods. Illustrate your views, wherever possible, by reference to leading authors and their works.

2. Give an estimate of Sir Philip Sidney.

3. What was the work of Francis Bacon as an intellectual pioneer?

4. Write an outline of main incidents in the struggle between Crown and Parliament, 1603-1640.

5. Describe: (*a*) Milton's own training;
(*b*) His theory of education;
(*c*) His career as a private and public controversialist.

6. Make brief notes on: Euphues; "new presbyter is but old priest writ large;" "Pride's Purge;" Falkland; the Thirty Years War.

B.

Answer the first question and two of the others.

1. "I was confirmed in this opinion that he who would not be frustrated of his hope to write hereafter in laudable things ought himself to be a true poem: not presuming to sing praises of heroic men or famous cities, unless he have in himself the experience and practice of all that is praiseworthy."

Using Comus as a basis, write a short essay on Milton's high moral standards.

2. Write on the evidence which Comus affords of Milton's familiarity with classical literature.

3. Give the substance, quoting textually wherever possible, of the dialogue between the two brothers.

4. Make notes on: steep Atlantic stream; the starry quire; cabined loop-hole; swinked hedger; bosky bourn, wattled cotes; oatem stops; toruffled; swart faery of the mine; return his purchase back.

EXAMINATION IN ENGLISH LITERATURE.

FIRST YEAR.

AFFILIATED COLLEGES,—STANSTEAD.

HENRY MORLEY:—*First Sketch* (pp. 222–628).

FRIDAY, APRIL 5TH:—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Give an account of More's Utopia.

2. What were Ascham's views regarding the English language, and Knox's views regarding the rule of women?

3. Describe an inn-yard theatre.

4. Sketch the career of Christopher Marlowe, and write on his plays.

5. Give an outline of Mother Hubberd's Tale. Name writers who may be termed Spenserians, and mention a piece or a work of each.

6. Unfold the plot of the Merchant of Venice, and disclose its inner spirit

7. Take Elizabeth's reign, and notice

(*a*) The Anglo-Saxon Revival.

(*b*) Translations from the classics.

8. Give some account of Bacon's philosophical system. Enumerate the "idols."

9. Of what character is Harrington's Oceana? Give its leading features, and name other works of the same class.

10. (*a*) State who wrote the following works, and give briefly some idea of the works themselves:

Leviathan, Euphues, History of Tithes, Every Man in His Humour, Groat's Worth of Wit.

(*b*) Name one work of each of the following writers, and state its general character:

John Skelton, Gavin Douglas, David Lindsay, Thomas Sackville, Stephen Gosson.

FIRST YEAR ENGLISH AND HISTORY.

AFFILIATED COLLEGES,—STANSTEAD

A.—Seebohm, *Era of the Protestant Revolution.*

B.—Comus.

Friday, April 5th, 1895:—2 to 5 p.m.

Examiners, ... { Chas. E. Moyse, B.A. / Chas. A. Colby, M.A., Ph D.

A.

1. Who were the Oxford Reformers of the movement 1509-1519? What were their chief aims, and how did they seek to compass them?

2. Follow in detail the course of the Lutheran Reformation from the Wittenberg Theses to the close of the Diet of Worms.

3. Write an account of the revolt of England from the Roman Church.

4. How was the counter-reformation effected?

5. Enumerate the principal results of the era of the Protestant Revolution.

B.

Answer the first question and two of the others.

1. "I was confirmed in this opinion that he who would not be frustrated of his hope to write hereafter in laudable things ought himself to be a true poem: not presuming to sing praises of heroic men or famous cities, unless he have in himself the experience and practice of all that is praise-worthy."

Using Comus as a basis, write a short essay on Milton's high moral standards.

2. Write on the evidence which Comus affords of Milton's familiarity with classical literature.

3. Give the substance, quoting textually wherever possible, of the dialogue between the two brothers.

4. Make notes on: steep Atlantic stream; the starry quire; cabined loop-hole; swinked hedger; bosky bourn; wattled cotes; oaten stops; to-ruffled; swart faery of the mine; return his purchase back.

INTERMEDIATE EXAMINATION, 1895.

ENGLISH LITERATURE: *Lectures on the Poets of the Nineteenth Century.*

FRIDAY, APRIL 5TH:—9 TO 12 A.M.

Examiner,..... ....CHAS. E. MOYSE, B.A.

When you can, quote briefly in illustration of your statements, and say, if necessary, whence the quotations are taken.]

1. Give some account of the French Encyclopædia.

2. What are Wordsworth's views regarding (*a*) education, (*b*) the Jacobins, (*c*) imagination, (*d*) the relative importance of Man and Nature, and the connection between them.

3. Mention the pieces of Coleridge referred to in the lectures, and add a few notes indicating the character of each.

4. Write on the Lady of the Lake.

5. Sketch the characteristics of Keats as a poet.

6. Write on Byron as (*a*) a satirist, (*b*) a poet of *freedom* and of *Nature*.

7. Sketch Shelley's early life, and notice his *Alastor* and *Revolt of Islam*.

8. (*a*) Compare and contrast Tennyson and Browning, OR (*b*) examine *In Memoriam* or *Christmas Eve and Easter Day*.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE.

SPALDING (pp. 1 —280) [FOR ST. FRANCIS COLL., RICHMOND.]

FRIDAY, APRIL 5TH :—9 TO 12 A.M.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Give an account of Anglo-Saxon prose literature.

2. Give a general idea of the character of (*a*) *The Mirror of Fools*, (*b*) *Confession of Golias*, (*c*) *A Mirror for Magistrates*, (*d*) *The Purple Island*. Name the writers of (*a*), (*b*) and (*d*).

3. State what you know concerning *Piers the Plowman*.

4. Write on Chaucer's minor poems, and state his characteristics as a poet; name some of his imitators.

5. (*a*) Give an account of the various kinds of entertainment which led up to the regular drama. (*b*) Write on the Unities.

6. (*a*) Notice the character of *Ferrex and Porrex*. (*b*) Give Spalding's estimate of Ben Jonson and Massinger as dramatists, and mention the plays to which he refers.

7. State the essential principles of Bacon's system of philosophy. What was his new Atlantis? Mention other works of the same class.

8. Take the period 1550-1650, and under the heads *translators* and *theologians*, write well-known names, adding a work of each author when you can.

INTERMEDIATE EXAMINATION IN ENGLISH HISTORY.

AFFILIATED COLLEGES,—ST. FRANCIS.

ARABELLA BUCKLEY, *History of England*.

FRIDAY, APRIL 5TH, 1895 :—2 TO 5 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A.
CHAS. W. COLBY, M.A., PH.D.

1. (*a*) Describe the social and political condition of the Angles and Saxons in the age immediately following their conquest of Britain.

(*b*) How were they converted to Christianity?

2. Write a detailed account of the reign of Henry II. with special reference to legal reforms and constitutional changes.

3. Discuss the campaigns and treaties of the Hundred Year's War.

4. Examine the relations of England and Scotland during the Tudor Period.

5. Write all you know about English affairs from the Trial of the seven Bishops to the Battle of the Boyne.

6. What countries took part in the Seven Years War? Follow the course of hostilities so far as it concerns England, and mention the terms of the peace by which the war was terminated.

7. Make notes on: Caractacus; Dunstan; Justiciar; statute of Mortmain; the Black Death; Act of Supremacy; Eikôn Basilikê; the Exclusion Bill; United Irishmen; "The People's Charter."

8. Assign events to the following years: 61: 1002: 1138: 1264; 1314 1558; 1697; 1745; 1805; 1854.

INTERMEDIATE EXAMINATION IN MODERN HISTORY.

AFFILIATED COLLEGES—STANSTEAD.

LODGE, *Modern Europe*, CAPS. XXI—XXVIII.

FRIDAY, APRIL 5TH, 1895:—2 TO 5 P.M.

Examiners,..... { CHAS. E. MOYSE, B.A. / CHAS. W. COLBY, M.A., PH.D

Write briefly but distinctly, on the following subjects:—

1. The administration of France 1774–1789.

2. The constitutional history of the Revolution from the meeting of the States General to the establishment of the Consulate.

3. The wars of the First Empire.

4. The rise of the modern kingdom of Greece.

5. The events of 1848 in France, Austria and Italy.

6. The Franco-German War 1870–71.

7. Make notes on: Sonderbund; Sadowa; Charles Albert of Sardinia; the Revolution of July; Garibaldi; Treaty of Berlin; Magenta; Thiers; the Congress of Vienna; the attempt of Orsini.

SESSIONAL EXAMINATIONS.

THIRD YEAR.

CHAUCER AND RHETORIC.

FRIDAY, APRIL 5TH :—2 TO 5 P.M.

Examiners,..... { CHAS. E. MOYSE, B.A.
PAUL T. LAFLEUR, M.A.

[Write the answers to A and B in different books.]

A. CHAUCER: *Prologue to Canterbury Tales.*

1. State to whom each of the following lines refers:

(*a*) And yet he was but esy of dispence

(*b*) Ay 'Questio quid juris' wolde he crye

(*c*) He hadde a croys of *latoun*, ful of stones

(*d*) A long surcote of *pers* upon he hade

(*e*) He was a Ianglere and a *goliardeys.*

(*f*) By water he sent hem hoom to every lond

(*g*) And yet he semed bisier than he was

(*h*) He wolde the see were kept for any *thing*

(*i*) He hadde of gold y-wroght a curious pin

(*j*) What sholde he studie and make him-selven *wood.*

(*k*) Hir nose tretys: hir eyen greye as glas

(*l*) And he was clad in cote and hood of grene

(*m*) His tipet was ay *farsed* ful of knyves

(*n*) Sowninge in moral vertu was his speche

(*o*) That on his shine a *mormal* hadde he

2. Mention the leading rules to be followed in reading Chaucer, so as to make the lines smooth, and illustrate from question 1.

3. Make notes on the words in italics.

4. Describe the Wyf of Bathe.

5. (*a*) Compare Chaucerian and Modern English forms in the following particulars:—

The imperative plural (2nd person); the plural of *fowl*; the superlative of *far*;

The plural of the present indicative; the adverb formed from *deep*;

The genitive plural of *they*; the construction of *lief.*

(*b*) Compare the Chaucerian and Modern English meanings of shall, may, mischief, fellow, danger, carp, villany.

(*c*) Take any three of the Chaucerian forms in (*a*), and write the lines in which they occur. Do the same with any three of the words in (*b*).

B. RHETORIC.

(N.B.—Additional marks given for excellence of style.)

1. (*a*) Explain, with an example of each:—Literal style, figurative style, simple style. (*b*) Swift defines style in the phrase, "Proper words in proper places;" criticise this definition.

2. Explain and illustrate:—Sarcasm, Irony, Antithesis, Climax.

3. Discuss the conditions of the pathetic, as illustrated in the work of the greatest writers.

4. What is meant by *Exposition?* Into what divisions and subdivisions would you arrange the several parts of any one of the following subjects?

A. Civilisation.
B. Photography.
C. The Influence of Culture.

Write a paragraph of five or six sentences explaining and defending any one of your minor divisions.

5. Explain the two purposes of oratory. By what means are these best attained?

6. Why is a *perfect* definition of Poetry difficult, if not impossible?

B.A. ORDINARY EXAMINATION.

EUROPEAN HISTORY.

MYERS, *Mediæval and Modern History;* BRYCE, *Holy Roman Empire.* Lectures.

FRIDAY, APRIL 5TH:—2 TO 5 P.M.

Examiner, ...CHAS. E. MOYSE, B.A.

[Answer group A and also any two questions in each of the groups B and C.]

A.—LECTURES.

1. Write briefly on the following subjects relative to Canadian history
(*a*) El Dorado.

(*b*) The system (not the history) of the Fur Trade under the French:

(*c*) The French system of land-tenure.

2. Draw a rough map of North America to illustrate leading features in the history of that continent, and write a short paragraph on the features you select.

3. (*a*) Show that a greater Greece existed before and after the days of Salamis and Marathon.

(*b*) Take Sicily to show that the central island-chain reflects the history of the world in miniature.

(*c*) Notice piracy as an historical factor.

(*d*) Compare the imperialism of Augustus and Diocletian.

(*e*) Trace the Imperial boundary of Trajan.

4. Write on Ravenna.

5. Make note on Magnesia, Philippi, Beneventum, magister militum, Chalons, Hiero of Syracuse, Homo-ousians, Jornandes, Stilicho, Toulouse consul ordinarius.

B.—Myers.

1. Give some account of the place of Venice, Genoa, Florence, in mediæval history.

2. Sketch the outlines of German history under the Hohenstaufens.

3. Make notes on Rienzi, Otto the Great, Grenada, Philip the Fair Bergen, the Lombard League, Bajazet, Avignon, St. Bernard, the Varaugians, Abubekr.

C.—Bryce.

1. Give some account of the Papacy under Gregory VII.

2. Describe Rome in the Middle Ages.

3. Estimate the place, character and policy of Charles V.

4. Choose some topic of historical importance, and give Bryce's treatment of it.

EXAMINATION FOR HONOURS IN ENGLISH AND HISTORY.

THIRD AND FOURTH YEAR HONOURS IN ENGLISH AND HISTORY.

LECTURES ON THE LIFE AND THOUGHT OF THE MIDDLE AGES.

FRIDAY, MARCH 29TH, 1895:—2 TO 5 P.M.

Examiners, ... { CHAS. E MOYSE, B.A.
CHAS. W. COLBY, M.A., PH.D.

1. (*a*) Why and how was Rome able to influence western civilisation during the period, which lies between the death of Stilicho, and the end of the Investiture controversy?

(*b*) Cite illustrations of mediæval interest in, and reverence for, the city itself.

2. Describe the doctrine and organization of the Latin Church with reference to:

(*a*) Enhancement of the dignity of the priestly office;
(*b*) Centralisation of ecclesiastical power;
(*c*) Exaltation of the ascetic ideal.

3. What was the part of monasticism in the improvement of European life during the early middle ages?

4. Explain the character of the feudal relation, its necessity, and the extremes of good and bad which it entailed.

5. Write an account of the communal movement in the Ile de France, calling attention to the difference which exists between it and the corresponding movement in Languedoc.

6. What are the main characteristics of Romanesque architecture, and its chief local modifications?

7. Emphasise the distinction between what in the Divine Comedy is of universal significance, and what is the expression of a man of the middle ages.

8. (*a*) Indicate types of thought on the question of *universals*.
(*b*) What was the position of Abelard as a speculator?

9. Make notes on: *Emphyteusis; Treuga Dei;* the crusade of Frederick II; Vaulting systems in a Gothic Cathedral; the circles of the "Inferno."

EXAMINATION FOR HONOURS IN ENGLISH LITERATURE AND MODERN HISTORY, 1895.

THIRD YEAR.

BURKE, *Reflections*; MACAULAY, *Essays on Clive, Ranke, and Warren Hastings*.

THURSDAY, APRIL 4TH:—2 TO 5 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / CHAS. W. COLBY, PH.D.

[Write the answers to A and B in different books.]

A.—BURKE.

1. Write on the composition of the *Tiers Etat*.

2. How does Burke deal with the monastic question?

3 Briefly state with what subject each of the following references is connected, and in what way:

(*a*) The estates of the Duke and Cardinal de Rochefoucault.

(*b*) Let him there meditate on his Thalmud, until he learns a conduct more becoming his birth and parts.

(*c*) The Republic of Berne.

(*d*) The Court and Senate of Areopagus.

(*e*) Mr. Law.

(*f*) You seem to me to be "gentis incunabula nostræ."

(*g*) The system of Empedocles and Buffon.

(*h*) It is powerful on Change, because in Westminster Hall it is impotent.

(*i*) The signet of "the Fisherman."

(*j*) *Un beau jour*.

B.—MACAULAY.

1. Reproduce Macaulay's account of the events and character of the Catholic Reaction.

2. Describe the mutual relations of Surajah Dowlah, Meer Jaffier and Clive down to the battle of Plassey.

3. Give brief character sketches of all the leading enemies of Warren Hastings throughout his career.

4. Make short notes on: the Paulician theology; Richelieu and Gustavus Adolphus: the successors of Arungzebe; Clive in Parliament; Mohammed Rez Khan; Cheyte Sing.

THIRD AND FOURTH YEAR HONOURS IN ENGLISH AND HISTORY.

LECTURES ON THE LIFE AND THOUGHT OF THE RENAISSANCE.

MONDAY, APRIL 8TH, 1895:—2 TO 3.30 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / CHAS. W. COLBY, M.A., PH.D.

1. (*a*) Define "Humanism."

(*b*) Under what circumstances did the view of life which it implies take possession of the Italian mind?

(*c*) What was the direct influence of the Italian Renaissance on:

1. Academic revival;
2. Artistic creation;
3. Personal ethics.

2. Write on the subject of Platonism in the Renaissance.

3. Describe briefly the chief incidents of the great schism, and of the subsequent conciliar movement.

4. Make notes on: the Avignonese "captivity"; Petrarch and the city of Rome; *hæmatomania*; literary gladiators in the 15th century; Nicholas V; Castiglione's "Cortegiano."

THIRD YEAR HONOURS IN ENGLISH AND HISTORY

Hallam, *Middle Ages*, Cap. III; *Macaulay*, History of England, Cap. I.

MONDAY, APRIL 8TH, 1895:—3.30 to 5.30 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / CHAS. W. COLBY, M.A., PH.D.

1. Describe throughout its whole course the struggle between Frederick Barbarossa and the Lombard towns.

2. (*a*) Write upon the constitutional history of Venice, from the earliest times to the establishment of the Council of Ten.

(*b*) What is the nature of Hallam's reflections on Venetian history and government?

3. "To this day the constitution, the doctrines, and the services of the [Anglican] church retain the visible marks of the compromise from which she sprang."

Elaborate this proposition.

4. Give a full account of Cromwell's rule after the first expulsion of the Long Parliament.

5. Make short notes on: the Normans in the two Sicilies; Rienzi; foreign *condottieri* in Italy; the peculiar character of the English aristocracy; the question of monopolies; pretenders to the leadership of the army after the death of Cromwell.

THIRD YEAR.

DRYDEN, *Annus Mirabilis, Absalom and Achitophel*, Preface to "*Fables.*"
SPENSER, *Faerie Queene*, bk. I.

THURSDAY, APRIL 11TH, 1895:—2 TO 5 P.M.

Examiner, ... CHAS. E. MOYSE, B.A.

1. (*a*) What kind of poem does Dryden affirm *Annus Mirabilis* to be? Why?

(*b*) How does Dryden describe *wit*?

2 (*a*) Refer very briefly each of the following lines to its place in the poem:

> And some by aromatic splinters die
> Where coin and first commerce he did invent
> When spotted death ran armed through every street
> Women and cowards on the land may lie
> And climbing from below their fellows meet

(*b*) Say where the following names occur, and make brief explanatory notes on each: the Iberian, Lawson, Munster, Xenophon, Simois, Cato.

(*c*) Notice allusions to the animal world in the portion of *Annus Mirabilis* which deals with naval battle.

3. Give an outline of *Annus Mirabilis* from the introduction of the subject of the *Fire* to the end.

4. Give some account of the Popish Plot.

5. Give an outline of that portion of *Absalom and Achitophel* which is not descriptive

6. To whom does each of the following lines apply?

(*a*) Restless, unfixed in principles and place.

(*b*) Stiff in opinions, always in the wrong.

(*c*) He packed a jury of dissenting Jews.

(*d*) This arch-attester for the public good.

(*e*) Scanted in space but perfect in thy line.

(*f*) Himself a Muse in Sanhedrin's debate.

(*g*) By foreign treaties he informed his youth.

7. Give your impressions of *Absalom and Achitophel*.

8. State how Dryden speaks of

(*a*) "Lineal descents and claus" in literature.

(*b*) Chaucer's and Boccaccio's relation to their native languages.

(*c*) Chaucer's views regarding the clergy.

(*d*) The individuality of Chaucer's characters.

(*e*) The literalness of his translation.

9. Show that the feelings of his time are reflected in Spenser's minor poems.

10. Trace Una through the First book of the *Faerie Queene*, and indicate allegory as you proceed.

11. (*a*) How does Spenser in his Prefatory letter speak of his choice of a hero, and the order of the poem.

(*b*) Give the construction of the Spenserian stanza, and make a note or two on its origin.

12. Give the meaning of amate, pardale, toy, stye, purchas, leasing, essayne, dissolute, combrous, bewaile.

THIRD YEAR.

ADDISON, *Essays on the Imagination and Paradise Lost*. MILTON, *Comus*.

SATURDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A.

1. What is the exact meaning of the word *Essay?* Give some idea of the development of Essay-writing in English Literature prior to Addison? (Your answer is not to exceed two pages in length.)

2. Write on the views of Addison's day concerning the sources of true criticism.

3. Deal with the following matters, as pointedly and tersely as you can:

(*a*) The two kinds of pleasures derived from the Imagination

(*b*) The relation of the pleasures of the Imagination to those of the Understanding

(*c*) The meaning of *Greatness*

(*d*) The final cause of the *new* and the *beautiful*

(*e*) "the prettiest Landskip I ever saw"

(*f*) British gardeners

(*g*) A Dome

(*h*) Statuary and painting.

(*i*) The Cartesian account of the association of ideas

(*j*) Pleasure derived from the terrors of a description

(*k*) The ancients and the fairy way of writing

(*l*) Metaphors and similes ought to be very exact or very agreeable.

4. Homer, Virgil, Milton: leading comparisons.

5. Give criticisms regarding (*a*) Satan, (*b*) Adan and Eve.

6. Give an outline of the paper which deals with the Battle of the Angels.

7. Refer the following lines to their places in *Conus*:

(*a*) 'Tis only daylight that makes sin.

(*b*) Like a sad votarist in palmer's weed.

(*c*) At last a soft and solemn-breathing sound
Rose.....

(*d*) Bearing her straight to aged Nereus' hall.

(*e*) Now the spell hath lost his hold.

8. Show that *Comus* is a true masque. How does it differ from masques in general?

9. Give an outline of the speeches which begin thus:

(*a*) *Lady.* I had not thought to have unlock't my lips.

(*b*) *Spirit.* What! have you let the false enchanter scape?

10. Reproduce allusions to classical mythology. Explain them, and say where each is found.

THIRD YEAR.

ANGLO-SAXON.

SATURDAY, APRIL 20TH :—2 TO 5 P.M.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Translate :—

(*a*) Thæt gafol bith on deora fellum, and on fugela fetherum, and hwales bane, and on thæm sciprapum, the beoth of hwæles hyde geworht, and of seoles. Æghwilc gylt be hys gebyrdum. Se byrdesta sceall gyldan fiftyne mearthes fell, and fif hranes, and an beren fell, and tyn ambra fethra, and berenne kyrtel oththe yterenne, and twegen sciprapas; ægther sy syxtig elna lang, other sy of hwæles hyde geworht, other of sioles.

(*b*) Tha het se cyng faran mid nigonum to thara niwena scipa; ond forforon him thone muthan foran on utermere. Tha foron hie mid thrim scipum ut ongen hie, ond threo stodon æt ufeweardum thæm muthan on drygum; wæron tha men*n* uppe on londe of agane. Tha gefengon hie thara threora scipa tu æt thæm muthan utewear dum, ond tha men*n* ofslogon, ond thæt an othwand; on thæm wæron eac tha men*n* ofslægene buton fifum; tha comon for thy on weg the thara otherra scipu asæton. Tha wurdon eac swithe unethelice aseten: threo asæton on tha healfe thæs deopes the tha Deniscan scipu aseten wæron, ond tha othru eall on othre healfe, thæt hira ne mehte nan to othrum. Ac tha thæt wæter wæs ahebbad fela furlanga from thæm scipum, tha eodan tha Deniscan from thæm thrim scipum to thæm othrum thrim the on hira healfe beebbade wæron, ond hie tha thær gefuhton. Thær wearth ofslægen Lucumon cynges gerefa, ond Wulfheard Friesa, ond Æbbe Friesa, ond Æthelhere Friesa, ond Æthelferth. cynges geneat, ond ealra monna, Fresiscra ond Engliscra LXII, ond thara Deniscena CXX. Tha com thæm Deniscum scipum theh ær flod to, ær tha Cristnan mehten hira ut ascufan, ond hie for thy ut othreowon. Tha wæron hie to thæm gesargode thæt hie ne mehton Suthseaxna lond utan berowan, ac hira thær tu sæ on lond wearp; ond tha men*n* mon lædde to Winteceastre to thæm cynge, ond he hie thær ahon het; ond tha men*n* comon on Eastengle the on thæm anum scipe wæron swithe forwundode.

(*c*) ‘ Gemunath thara *m*æla, the we oft æt *m*eodo spræcon,
thonne we on *b*ence *b*eot ahofon,
*h*æleth on *h*ealle, ymbe *h*eard gewinn :

nu mæg cunnian hwa cene sy.
Ic wylle mine æthelo eallum gecythan,
thæt ic wæs on Myrcon micceles cynnes,
wæs min ealda fæder Ealhelm haten,
wis ealdormann, woruldgesælig.
Ne sceolon me on thære theode thegenas ætwitan,
thæt ic of thisse fyrde feran wille,
eard gesecan, nu min ealdor ligeth
forheawen æt hilde; me is thæt hearma mæst:
he wæs ægther min mæg and min hlaford.'

Da gyt on orde stod Eadweard se langa,
gearo and geornfull; gylpwordum spræc,
thæt he nolde fleogan fotmæl landes.
ofer bæc bugan, tha his betera læg:
he bræc thone bordweall, and with tha beornas feaht,
oth thæt he his sincgyfan on tham sæmannum
wurthlice wræc, ær he on wæle læge.
Swa dyde Ætheric, æthele gefera,
fus and forthgeorn, feaht eornoste,
Sibyrhtes brothor and swithe mænig other
clufon cellod bord, cene hi weredon,
bærst bordes lærig, and seo byrne sang
gryreleotha sum.

(d) Hi tha somod ealle
ongunnon cohhetan, cirman hlude,
and gristbitian Gode orfeorme,
mid tothon torn tholigende; tha wæs hyra tires æt ende,
eades and ellendæda. Tha eorlas hogedon
aweccan hira winedryhten: him wiht ne speow.
Tha wearth sith and late sum to tham arod
thara beadorinca, thæt he in thæt burgeteld
nithheard nethde, swa hyne nyd fordraf:
funde tha on bedde blacne licgan,
his goldgifan gæstes gesne,
lifes belidenne.
Cirdon cynerofe,
wiggend on withertrod, wælscell oninnan,
reocende hræw; rum wæs to nimanne
londbuendum on tham lathestan,

hyra ealdfeondum unlyfigendum
heolfrig herereaf, hyrsta scyne,
bord and brad swyrd, brune helmas,
dyre madmas.

(*e*) Ic wæs wæpenwiga: nu mec wlonc theceth,
geong hagostealdmonn golde and sylfore,
woum wirbogum. Hwilum weras cyssath;
hwilum ic to hilde hleothre bonne
wilgehlethan; hwilum wyeg byreth
mec ofer mearce, hwilum merehengest
fereth ofer flodas frætwum beorhtne;
hwilum mægtha sum minne gefylleth
losm beaghroden; hwilum ic bordum sceal
heard heafodleas behlythed licgan,
hwilum hongige hyrstum frætwed
wlitig on wage thær weras drincath;
freolic fyrdsceorp hwilum folcwigan
wicge wegath: thonne ic winde sceal
sincfag swelgan of sumes bosme.
Hwilum ic [to] gereordum rincas lathige
wlonce to wine, hwilum wrathum sceal
stefne minre forstolen hreddan,
flyman feondsceathan. Frige hwæt ic hatte!

PROSODY.

1. Define and denote, with the usual signs, primary stress, secondary stress, anacrusis (*auftakt*), resolution, elision. Comment on final "sonants."

2. Write with the usual signs a verse of (*a*) shortened, (*b*) strengthened type: also one species of "swell-verse." What is Luick's theory of the formation of the "swell-verse"?

3. State the general principles which guide you to the determination of verse-type. Write the five *normal* types of verse, and illustrate any three of them from ext. (C.)

4. Write all the modifications of the A-type which have a distinguishing nomenclature.

GRAMMAR.

1. Give the *i* umlant of $\bar{a}$ and $\bar{o}$: illustrate: *man*, geminate and nasalize. Designate the two kinds of *c's* in A.S., and show the influence of one of them.

2. Decline *ende* (*m*) and *bearu* (*m*). Designate the final *u* of *bearu*.

3. How does the acc. sing. of *dæd* (*f*) differ from that of *stræt* (*f*), and the nom. pl. of *hus* (*n*) from that of *scip* (*n*)? Give the rule which applies to the latter.

4. Decline *god* throughout, both in the strong and the weak form.

5. Give the comparative of the adjectives *lang*, *eald*, *héah*. Write the cardinals from one to six, and the ordinals from seven to ten.

6. Decline *thu* throughout.

7. Write out the indicative mood of *céosan* and the subjunctive of *bindan*.

8. Write out *hieran* in full.

9. What is meant by a præterito-præsentia verb? Illustrate. Give the meaning of the prefixes *ed*, *or*, *wan*. What case do *mid*, *of*, *to* govern?

10. You are dealing historically with the question of the form, inflection, spelling or pronunciation of Teutonic words in English illustrate important points by giving ten examples in all.

THIRD YEAR.

CHAUCER, *Parlement of Foules*; SIDNEY, *Apologie for Poetrie*; MILTON, *Areopagitica*.

MONDAY, APRIL 22ND, 1895:—2 TO 5 P.M.

Examiners..... { CHAS. E. MOYSE, B.A.
CHAS. W. COLBY, M.A., PH.D

(*Write the answers to* A *and* B *and* C *in separate books.*)

A.

1. Mention the sources from which Chaucer drew when writing the *Parlement of Foules*.

2. Give the arguments of the birds.

3. Give the substance of the stanzas which begin as follows:

(*a*) The wery hunter, slepinge in his bed.

(*b*) "Thorgh me men goon into that blisful place."

(*c*) The bilder oak, and eke the hardy asshe.

B.

1. In what respects is the poet a better teacher than the philosopher or the historian?

2. Bring together all references in the "Apologie for Poetrie" to poets of Great Britain, citing the context in each case.

3. Make notes on: Vates; Tully: expulsion of poets from Plato's Republic; pastoral poetry; soldier's love of poetry.

C.

1. How does Milton refer to

(*a*) ideal commonwealths.

(*b*) the aping of Latin.

(*c*) the resigning of religion to another.

(*d*) fabulous Dragon's teeth.

(*e*) the chief of learned men—in this Land.

(*f*) broad cloth and wooll packs.

(*g*) souldierly ballats.

(*h*) Plato.....in the book of his laws.

(*i*) Lord Brook's view of sects.

(*j*) the tomb of Harry the 7.

(*k*) Spencer and Scotus.

(*l*) Lycurgus.

2. Give an account of licensing from the adoption of Christianity as an Imperial cult down to the time of Leo X. Mention the precise legislation with which Milton was concerned.

3. Give the outline of the passages which begins thus:

Truth indeed came once into the world with her divine master.

4. Give an outline of that portion of *Areopagitica* which refers directly to the city of London.

THIRD YEAR.

WORDSWORTH: *Prelude;* MILTON: *L'Allegro* and *Il Penseroso; Arcades.*

WEDNESDAY, APRIL 24TH, 1895:—2 TO 5 P.M.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Show how Wordsworth refers to

(*a*) Wallace; (*b*) the antechapel of Trinity College, Cambridge; (*c*) Bucer; (*d*) the Vale of Chamouny; (*e*) his visit to the ruins of the Bastille;

(*f*) the sacrificial altar on Salisbury Plain; (*g*) Coleridge and "Quantock's airy ridge."

2. *Sound* being an important element in Wordsworth's poetry, state how it appears in the passage which refers to

(*a*) the poet when "a babe in arms"

(*b*) climbing for birds' nests (Yewdale)

(*c*) the nave of Furness

(*d*) the landscape round Esthwaite in the description of the skating

(*e*) the "pause of silence," when the "boy" imitated the owls.

(*f*) the recollection of the crag where the poet waited for the palfreys

3. In connection with the following matters, make a single but important statement bearing on Wordsworth's opinions or mental development: (*a*) a fox glove, (*b*) the sun, (*c*) mathematics, (*d*) "life" in Nature, (*e*) novels, (*f*) Robespierre's death, (*g*) the worth of the individual.

4. Give the substance of the passage which opens with

"Beside the pleasant mill of Trompington."

5. Describe (*a*) the poet's experience near Gravedona; (*b*) the ascent of Snowdon.

6. Name any important theme which the *Prelude* suggests, and write under its title the headings of six of its important aspects. [You are not to use the details of previous questions.]

7. *L'Allegro* and *Il Penseroso*: explain the titles.

8. Describe the "day" in *L'Allegro*. [*To hear the lark begin his flight.*]

9. Give the invitation to Melancholy in *Il Penseroso*. [*Come, pensive hour.*]

Select from *Il Penseroso* five lines in different divisions which contain ordinary words requiring explanation. Explain the words and give the context of the lines.

10. For whom was *Arcades* written? Show that it is a masque.

11. Show that Arcades is Arcadian, and as you do so explain any allusions which require explanation.

B. A. HONOURS.

Shakspere : *Love's Labour's Lost*, *A Midsummer Night's Dream*, *Hamlet*.

WEDNESDAY, APRIL 3RD :—2 TO 5 P.M.

Examiner, ...CHAS. E. MOYSE, B.A.

1. Write on pedantry as seen in L. L. L.

2. Trace Biron through the play.

3. What allegorical history may be contained in the *Dream* ?

4. (*a*) Write on the characteristics of the *Dream*. [Your answer is not to exceed two pages in length.]

(*b*) Explain : collied, To do observance to a morn of May, childing autumn rere-mice, a Bergomask dance.

(*c*) Quote or give the substance of the speeches which begin with :

These are the forgeries of jealousy
When my cue comes, call me.

5. Show that the movement of *Hamlet* up to the point of absolute proof does not drag.

6. Trace the King's course of thought in the second part of the play.

7. Write on some subject connected with dramatists, or the drama itself, or Shakspere.

B.A. HONOURS.

SHELLEY : *Adonais*. CAMPBELL : *Pleasures of Hope*.

SATURDAY, APRIL 6TH :—2 TO 5 P.M.

Examiner, ...CHAS. E. MOYSE, B.A.

1. From Adonais, illustrate some of Shelley's characteristics as a poet.

2. Without giving an outline of *Adonais*, display the leading elements of its mechanism.

3. State with what particular aspect of the general theme each of the following lines is connected, and give the substance of its immediate setting :

(*a*) And read the trembling world the tales of hell

(*b*) No lingering hour of sorrow shall be thine

(*c*) On Erie's banks where tigers steal along

(*d*) And braved the stormy spirit of the Cape

(*e*) And arms and warriors fell with hollow clang

(*f*) Launch'd with Iberia's pilot from the steep

(*g*) And bade his country and his child farewell

(*h*) Still slowly passed the melancholy day

(*i*) For ever fall'n! no son of Nature now

(*j*) Poor widow'd wretch! 'twas there she wept in vain

4. Give an outline of Part II. of *The Pleasures of Hope*.

5. Mention and group the heads you would enlarge on, in an address or in an article on *Thomas Campbell, the poet*.

6. Take two of the heads and write on them.

B.A. HONOURS.

GUIZOT—HISTORY OF CIVILIZATION IN EUROPE

TUESDAY, APRIL 9TH, 1895:—

Examiners, ... { CHAS. E. MOYSE, B.A.
CHAS. W. COLBY, M.A., PH.D.

(*Write the answers to A and B in separate Books*).

A.

1. Discuss: (*a*) The causes of barbarism during the dark ages;

(*b*) Early reconstructive forces;

(*c*) Attempts made between the 5th and 9th centuries to extricate European society from its state of depression.

2. (*a*) What are the conditions upon which legitimacy of government depends?

(*b*) In what measure did the mediæval church satisfy these conditions, and in what measure did she fall short of satisfying them?

3. Estimate: (*a*) The value of what the barbarians contributed to European civilisation;

(*b*) The results of the enfranchisement of the commons in mediæval towns.

4. Make short notes on: (*a*) The Rescript of Honorius and Theodosius II.;

(*b*) The character of Arab invasions of Europe;

(*c*) Gregory VII.

B.

1. Write (*a*) on the causes which led Europe to take part in the Crusades.

(*b*) On the States-general of France.

2. Mention, and distinguish between, the three parties of the English revolution.

3. What were the effects of the Reformation in those countries of Europe where its influence was felt? Notice the state of countries unin fluenced by it.

4. Make one statement of importance concerning each of the following matters:—

(*a*) The character of the wars of Louis XIV. (Give a proof.)

(*b*) The additional element in the politics of the reign of James II.

(*c*) The Pragmatic Sanction.

(*d*) The character of the policy of Louis XI.

(*e*) The weakness in the policy of Gregory VII.

(*f*) The trend of the history of the Italian republics.

(*g*) Barbaric and imperial royalty.

B.A. HONOURS.

TENNYSON: *Idylls of the King, Coming of Arthur, Gareth and Lynette, Holy Grail, Passing of Arthur.*

WEDNESDAY, APRIL 10TH, 1895:—2 TO 5 P.M.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Give some idea of the development of the Arthur story in European literature.

2. Describe the Lady of the Lake in *Gareth and Lynette*. Make notes on

(*a*) The ninth wave

(*b*) Merlin's triplets

(*c*) The allegory of Leodogran's dream.

3. How does Tennyson vary from the romance in *Gareth and Lynette*? Give an outline of the Idyll.

4. Who was the hero of the oldest Graal story? Describe the experiences of the Knights, and point out the allegory involved.

5. Write an essay of not less than three pages on *The Passing of Arthur.*

B.A. HONOURS.

GIBBON, *Decline and Fall of the Roman Empire*, Caps. L, LI, LXIV, LXV.

FRIDAY, APRIL 12TH, 1895:—2 TO 5 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / CHAS. W. COLBY, M.A., PH.D.

[*Write the answers to* A *and* B *in separate books.*]

A.

1. Give a synopsis of the chief Mohammedan doctrines and observances.

2. (*a*) Under what circumstances did the Saracens conquer Spain?
(*b*) What was the condition of that country under their rule?

3. Write on: (*a*) Treatment of Christians by Moslems.
(*b*) The great scheme in the Moslem world.

4. Make notes on: Sabians, Koreish, Cadesia, Yermuk, the Fair of Abyla.

B.

1. Describe the conquests of the Moguls in China and Europe.

2. Write on (*a*) Amir, the son of Ardin; John, Count of Nevers; Marshal Boucicault.

3. Sketch the character of Timour. Mention six of the most momentous events of his career, and enter into detail concerning two of them.

4. Write on the recruiting of the Turkish army.

B.A. HONOURS.

THIRD YEAR.

ANGLO SAXON; (*Unseen*) EARLY ENGLISH; MORRIS AND SKEAT.

Specimens Part II. Extt. I-IX)

MONDAY, APRIL 15TH, 1895:—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Translate:—

Tha het se cyning sellan Apollonie tha hearpan. Apollonius tha uteode and hine scrydde, and sette ænne cynehelm upon his heafod, and nom tha

hearpan on his hand, and ineode, and swa stod thæt se cyning and ealle tha ymbsittendan wendon thæt he nære Apollonius, ac thæt he wære Apollines, thæra hæthenra god. Da wearth stilnes and swige geworden innan thære healle. And Apollonius his hearpenægl genom, and he tha hearpestrengas mid cræfte astyrian ongan, and thære hearpan sweg mid wynsumum sange gemengde. And se cyning self, and ealle the thær andwearde wæron, micelre stefne cleopedan and hine heredon. After thisum forlet Apollonius tha hearpan and plegode, and fela fægerer thinga thær forthteah, the thæm folce ungecnawen wæs and ungewunelia. And him eallum thearle licode ælc thæra thinga the he forthteah.

Sothlice, mid-thy-the thæs cyninges dohtor geseah thæt Apollonius on eallum godum cræftum swa wel wæs getogen, tha gefeoll hiere mod on hi, lufe. Tha, æfter thæs beorscipes geendunge, cwæth thæt mæden to thæm cyninge: "Leofa fæder thu liefdest me, lytle ær, thæt ic moste giefan Apollonio swa-whæt-swa ic wolde of thinum goldhorde." Arcestrates se cyning cwæth to hiere: "Gief him swa-hwæt-swa thu wille." Heo tha swithe blithe uteode,, and cwæth: Lareow Apollini, ic giefe the be mines fæder leafe, twa hund punda goldes, and feower hund punda gewihte seolfres, and thone mæstan dæl deorwurthes reafes, and twentig theowa manna." And heo tha thus cwæth to thæm theowum mannum: "Berath thas thing mid eow, the ic behet Apollonio minum lareowe, and lecgeath innan bure beforan minum freondum." This wearth tha thus gedon, after thære cwene hæse: and ealle tha menn hiere giefa heredon the hie gesawon. Tha sothlice geendode se gebeorscipe, and tha menn ealle arison, and gretton thone cyning and tha cwene, and bædon hie gesunde beon, and ham gewendon. Eac swilce Apollonius cwæth: "Thu goda cynin and earmra gemiltsiend, and thu cwen, lare lufiend, beon ge gesunde." He beseah eac thæm theowum mannum, the thæt mæden him forgiefe hæfde, and him cwaeth to: "Nimath thas thing mid eow, the me seo cwen forgeaf, and gan we secean ure giesthus, thæt we mægen us gerestan."

"Næfre ic sælidan selran mette,
macræftigran, thæs-the me thynceth,
rowend rofran, rædsnotteran,
wordes wisran. Ic wille the,
eorl unforcuth, anre nu gena
bene biddan: theah ic the beaga lyt,
sincweorthunga, syllan mihte,
fætedsinces, wolde ic freondscipe,
theoden thrymfæst, thinne, gif ic mehte,
begitan godne. Thæs thu gife hleotest
haligne hyht on heofonthrymme,
gif thu lidwerigum larna thinra
este wyrthest.

2. Translate :—

Ext.—I. (A) ll. 191-207.
I. (B) ll. 61-69.
II. Psalm XXIII. Psalm CIII. ll. 1-34
III. ll. 146-160.
IV. ll. 11-20.
VI. ll. 50-66 ;99-105 ; 127-133.
XX. ll. 107-157.

3. Give the leading differences between the three principal E.E. dialects.

B.A. HONOURS.

TENNYSON : —*In Memoriam.*

MONDAY, APRIL 15TH :—2 TO 5 P.M.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Trace carefully the development of the poem up to the defining point (VII).

2. How do the sections which begin as follows bear on the development of the poem ?

(*a*) To-night the winds begin to rise
And roar.
(*b*) I envy not in any moods
The captive.
(*c*) The baby new to earth and sky.
(*d*) 'So careful of the type?' but no.
(*e*) How pure at heart and sound in head.
(*f*) On that last night before we went
From out the doors where I was bred.

3. Trace the outlines of the poem from the third Christmas-tide to the end.

4. By appealing to the poem, defend the objections advanced in the lectures to dividing *In Memoriam* into a prefatory portion and three Cycles.

5. Write on one of the following subjects :

(*a*) The imagery and passion of *In Memoriam*.

(*b*) *In Memoriam* and Christmas-Eve and Easter-Day ; similarities and differences.

(*c*) Leading ideas in *In Memoriam* visible elsewhere in Tennyson.

6. (*a*) Examine the Prologue and justify the Epilogue ; (*b*) illustrate the Prologue from the poem.

B.A. HONOURS.

Mœso-Gothic, *Ulfilas* (Gospel of St. Mark): Morris and Skeat *Specimens of Early English*, Part II., Extt. X-XX.

Thursday, April 18, 1895:—Afternoon, 2 to 5.

Examiner, ...Chas. E. Moyse, B.A

A.

1. Translate:—

Anastodeins aiwaggeljons Iesuis Xristaus sunaus guths.

Swe gamelith ist in Esaïin praufetau: sai, ik insandja aggilu meinana aira thus, saei gamanweith wig theinana faura thus.

Stibna wopjandins in authidai: manweith wig fraujins, raihtos waurkéth staigos guths unsaris.

Jah galaith aftra in Kafarnaum afar dagans, jah gafrehun thatei in garda ist.

Jah suns gaqemun managai, swaswe juthan ni gamostedun nih at daura, jah rodida im waurd.

Jah qemun at imma uslithan bairandans, hafanana fram fidworim.

Jah andhof im qithands: hwo ist so aithei meina aiththau thai brothrjus meinai?

Jah bisaihwands bisunjane thans bi sik sitandans qath: sai, aithei meina jah thai brothrjus meinai.

Saei allis waurkeith wiljan guths, sa jah brothar meins jah swistar jah aithei ist.

Aththan thai withra wig sind, tharei saiada thata waurd, jah than gahausjand unkarjans, suns qimith Satanas jah usnimith waurd thata insaiano in hairtam ize.

Jah sind samaleiko thai ana stainahamma saianans, thaiei than haus and thata waurd, suns mith fahedai nimand ita.

jah ni haband waurtins in sis, ak hweilahwairbai sind; thathroh, bithe diuiith aglo aiththau wrakja in this waurdis, suns gamarzjanda.

Jah fairgraip bi handau thata barn qathuh du izai: taleitha kumei, thatei ist gaskeirith: mawilo, du thus qitha: urreis.

Jah suns urrais so mawi jah iddja: was auk jere twalibe; jah usgeis iodedun faurhtein mikilai.

Jah anabauth im filu ei manna ni funthi thata: jah haihait izai giban matjan.

Jah suns insandjands sa thiudans spaikulatur, anabauth briggan haubith is. Ith is galeithands afmaimait imma haubith in karkarai,

jah atbar thata haubith is ana mesa, jah atgaf ita thizai maujai, jah so mawi atgaf ita aithein seinai.

Jah gahausjandans siponjos is qemun jah usnemun leik is jah galagidedun ita in hlaiwa.

Jah gaqemun sik du imma Fareisaieis jah sumai thize bokarje, qimandans us Iairusaulymim.

Jah gasaihwandans sumans thize siponje is gamainjaim handum, that-ist unthwahanaim, matjandans hlaibans;

ith Fareisaieis jah allai Iudaieis, niba ufta thwahand handuns, ni mat jand, habandans anafilh thize sinistane.

(*Unseen*) Aththan ik qitha izwis thatei hwazuh modags brothr seinamma sware, skula wairthith stauai; ith saei qithith brothr seinamma raka skula wairthith gaqumthai; aththan saei qithith dwala, skula wairthith in gaiainnan funins.

Jabai nu bairais aibr thein du hunslastada, jah jainar gamuneis thate brothar theins habaith hwa bi thuk,

aflet jainar tho giba theina in andwairthja hunslastadis, jah gagg faurthis gasibjon brothr theinamma, jah bithe atgaggands atbair tho giba theina.

2. Parse the words of the second three verses of the extracts given in question 1.

3. Give M.G. and A.S correspondences, and illustrate from question 1.

B.

1. Translate:

Ext. X. ll. 2300-2311.
Ext. XI. (B) 79-96.
Ext. XII. 326-344.
Ext. XIII. 361-376.
Ext. XV. [Passus V]. 117-135.
Ext. XVI. 79-104.

2. Give an outline of the Man of Lawes Tale.

B.A. HONOURS.

ANGLO-SAXON: *Beowolf.*

FRIDAY, APRIL 19TH, 1895:—2 TO 5 P.M.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Translate:—

(*a*) ll. 76–90
(*b*) ll. 210–224
(*c*) ll. 320–331
(*d*) ll. 506–523
(*e*) ll. 711–728
(*f*) ll. 838–864

2. (*a*) Make notes, grammatical, textual, philological or explanatory on : hwæt, Scyld Scefing, swæse, healsgebedde, feond on helle orcneas, gifstol, eoforlic scionon, larena god, geatolic, antid.

(*b*) Give eleven other words or allusions which have been treated in the lectures, and write explanatory notes on each.

B.A. HONOURS.

VILLIERS : *Rehearsal* ; MORE : *Utopia.*

SATURDAY, APRIL 20TH, 1895 :—2 TO 5 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / CHAS. W. COLBY, M.A., PH.D.

Write the answers to A and B in separate books.

A

1. Select from the *Rehearsal* allusions and *dramatis personæ* which point to the leading features of the Restoration drama.

2. Cite absurd situations in the first four Acts.

3. At the beginning of Act V, Bayes says : "Now, gentlemen, I will be bold to say, I'll shew you the greatest Scene that ever *England* saw." Describe it, and give an outline of the play to the end.

4. Write a short essay on Sheridan's *Critic.*

B

1. Write a short essay on More's knowledge of the classics as revealed in Utopia.

2. Hythlodage attacks certain contemporary evils, both legal and political. Enumerate them, and dwell upon those which most directly affected England.

3. Describe the sciences, crafts and occupations of Utopia.

4. Make notes on : Macariens ; Anyder ; the use of gold in Utopia ; the attitude of the Utopians towards (*a*) hunting, (*b*) irreligious persons.

B. A. HONOURS.

BUCKLE, *History of Civilization*, Vol. I., Caps. I., II. : Vol. II., Cap. I
MACAULAY, *History of England*, Cap. III.

MONDAY, APRIL 22ND, 1895 :—2 TO 5 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A.
CHAS. W. COLBY, M.A., PH.D

1. In what ways does Buckle use statistics to prove the regularity of human actions.

2. To illustrate the effect of physical agents upon man, Buckle describes the civilization of certain American States. Follow him in his arguments and illustrations.

3. What was the condition and influence of the Spanish church during the 17th century ?

4. What did Charles III do for Spain ?

5. Describe the British military system of 1685.

6. Without attempting to give minute details, reproduce the salient features of Macaulay's description of London.

7 Write on the triumph of the Verulamian philosophy.

B. A. HONOURS.

POPE : *Essay on Criticism ; Essay on Man.*

WEDNESDAY, APRIL 24TH, 1895 :—2 TO 5 P.M.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Write on the critical standards and views of Pope's day, and illustrate them from the *Essay on Criticism.*

2. Show that Bolingbroke's philosophy is the groundwork of Pope's *Essay on Man.*

3. Give an outline of Pope's method in dealing with the following subjects :—

(*a*) the ascending scale of animate life. [Epistle I.]
(*b*) the lower creatures as instructors of man. [Epistle III.]
(*c*) of the origin of tyranny and the restoration of better government. [Epistle III.]
(*d*) Greatness and Fame. [Epistle IV.]

INTERMEDIATE EXAMINATION.

FORMAL LOGIC.

WEDNESDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiners, ... { J. CLARK MURRAY, LL.D. / P. T. LAFLEUR, M.A.

1. In how far is Logic dependent on language?

2. Explain briefly and illustrate:—the connotation of names, distribution, the relation between denotation and connotation.

3. (*a*) Explain the nature, and give the rules of logical definition. (*b*) Give simple examples of common cases of the neglect, or the violation, of any *two* of these rules.

4. What is a Proposition? Illustrate all the ordinary propositional forms with the Eulerian circles.

5. (*a*) Give all the propositions standing in relations of opposition to the following:—"All liquids are compressible." Determine, if the original proposition be taken as *true*, which of its opposites are true and which false.

(*b*) Taking again the same proposition, give its converse, its contrapositive, and the contradictory of its converse.

6. (*a*) Why must at least one premise of the syllogism be universal? (*b*) Why is there no syllogistic inference possible from two negative propositions?

7. Construct syllogisms in Disamis and Camenes, with terms, *not* with mere symbols. Reduce them according to the rules. Shew that the diagrammatic circles are useful for the illustration of these two types of syllogism.

8. Explain, with an illustration of each, the following fallacies:—undistributed middle, begging the question.

9. Examine and criticise the following specimens of argument:—

(*a*) "When we are ill of a bodily disease, we consult a physician in order to learn the nature of the malady, and to be cured of it; consequently, when we are in moral perplexity, or when we have been guilty of some wrong, which is moral disease, we ought to consult a healer of consciences,—that is, a moral adviser.

(*b*) He who is content with what he has is truly rich: a covetous man is not content with what he has; no covetous man therefore is truly rich.

(*c*) A man cannot lose either the past or the future; for what a man has not, how can any man take this from him?

(*d*) My friend told me that my health would improve if the treatment prescribed was effective; and as my health has improved, the treatment must have been effective.

THIRD YEAR EXAMINATIONS.

MURRAY'S HANDBOOK OF PSYCHOLOGY, Book II., Part II.

WEDNESDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

(*Answer only nine questions.*)

1. Explain fully the mental process involved in the perception of a sound as being the familiar voice of a friend.

2. Describe the tendency of evolution in regard to the perceptions of Taste and of Smell respectively; *or* compare the intellectual value of the two senses.

3. Explain how the sense of Touch is extended so as to give a perception of objects that are not in immediate contact with the organism.

4. Explain the perceptions of distance and direction by sound, *or* describe the articulate sounds of speech.

5. Give a general account of the experience of persons born blind on being restored to sight.

6. Explain the binocular perception of distance.

7. Why is that, when we are sitting in a stationary train, and a train on the adjoining track moves, we seem ourselves to be moving?

8. Explain fully the nature of Abstraction.

9. Show that the evolution of knowledge is in the direction both of Individualisation and of Generalisation; *or* explain the functions of common nouns (general terms).

10. Distinguish the Logic and the Psychology of Reasoning; *or* distinguish the Speculative, the Practical and the Aesthetic activities of intelligence.

11. Describe the general character of all the visual arts and the distinctive character of each.

12. What are the general factors of all knowledge, and the opposite theories in regard to these?

THIRD YEAR EXAMINATIONS.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

JAMES' PRINCIPLES OF PSYCHOLOGY AND FRASER'S SELECTIONS FROM BERKELEY.

SATURDAY, APRIL 13th:—MORNING, 9 TO 12.

Examiner.....J. CLARK MURRAY, LL.D.

(*Answer only five questions from I., and four from II.*)

I.

1. Distinguish the material, the social and the spiritual self, *or* discuss the question, what self we love in self-love.

2. Distinguish the varieties of Attention, *or* give some account of its effects.

3. State the Nominalism of Berkeley, and show that, while formally maintained, it is substantially abandoned, by J. S. Mill.

4. Explain the causes which are at work in the improvement of discrimination by experience, *or* state and criticise Fechner's psychophysic law.

5. Discuss the question, whether Similarity is an elementary law of Association.

6. Point out some variations of our time-estimate.

7. Explain wherein all improvement of Memory consists, *or* mention some of the pathological phenomena of Memory.

II.

1. Give an outline of the New Theory of Vision.

2. Connect Berkeley's theory of the Material World with his Nominalism.

3. Explain the statement, that the *esse* of sensible things is *percipi*.

4. Mention any two of the objections to Berkeley's theory taken up in the Principles of Human Knowledge, and his reply.

5. Give a brief account of the Theory of Visual Language *or* of "Siris."

THIRD YEAR HONOURS IN MENTAL AND MORAL PHILOSOPHY.

LOGIC.

MONDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiners,..... { J. CLARKE MURRAY, LL.D. / P. T. LAFLEUR, M.A.

1. Make *short* notes on: Mill's distinction between observation and description; the three essential parts of a philosophical language; natural classification.

2. Give, in outline, Mill's classification of Fallacies; and discuss with an example (original, if possible) *one* of the minor subdivisions.

3. What is Thomson's definition of Logic? How does he support his conception?

4. Make short notes on—Jevons' definition of *Cause*; his discrimination between Certainty and Probability; the ambiguity of the expression "Uniformity of Nature."

5. Give some idea of the legitimate use of Hypotheses, *or* of Analogy, as aids to proof.

6. What are the principal postulates required by Venn as the necessary bases of an empirical objective logic?

7. Give in outline Venn's objections against the use of Mill's Methods of Induction, as they are ordinarily interpreted and illustrated.

8. Show that Verification, if it is to have probative force, must be conducted with great caution; especially in complex questions deductively investigated.

THIRD YEAR EXAMINATIONS, 1895.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

GREEK PHILOSOPHY AND PLATO'S THEAETETUS.

THURSDAY, APRIL 25TH :— MORNING, 9 TO 12.

Examiner,..... .....J. CLARK MURRAY, LL.D.

Answer five of the first eight, and three of the last four questions.

1. Give a brief account of the School with which Greek Philosophy begins.

2. Sketch one of the other systems belonging to the first period of Greek Philosophy.

3. Who brought Philosophy to Athens, and what was his distinctive doctrine?

4. Give a brief account of the Sophists *or* of Sokrates.

5. Sketch *either* the Dialectic *or* the Ethics of Plato.

6. Sketch *either* the First Philosophy *or* the Physics of Aristotle.

7. Give a brief outline *either* of the Stoical *or* of the Epicurean Philosophy.

8. Give a brief account of the New Academy.

9. State definitely the question discussed in the *Theaetetus*.

10. Explain the first answer suggested, and its connection with the doctrines of Herakleitos and of Protagoras.

11. State any of the objections urged against this answer to the question.

12. State the third answer, and mention, in connection with it, the different meanings given to the term λόγος.

B.A. EXAMINATIONS.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

MAINE'S ANCIENT LAW.

SATURDAY, MARCH 30TH :—MORNING, 9 TO 12.

Examiner,..... J. CLARK MURRAY, LL.D.

(*Answer only six questions.*)

1. Describe the jural conditition of society, as illustrated by the primitive conception of Themis and Themistes.

2. What was the Roman *Jus Gentium* originally, and how did it come to be identified with the Law of Nature?

3. Trace the later developments of the doctrine of a Law of Nature.

4. Explain the Roman *Patria Potestas*.

5. Sketch the origin of Property with special reference to the theory which traces it to a primitive occupancy of *res nullius*.

6. Trace the early history of Testamentary Succession.

7. Trace the early history of Contract.

8. Sketch the development of the idea of crime.

9. Describe the influence of Roman Law upon Latin Theology.

B.A. EXAMINATIONS.

MORAL PHILOSOPHY.

TUESDAY, APRIL 2ND :—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

(*Answer only eight questions.*)

1. What is mean by Hedonism, Eudemonism, Egoism, Altruism?

2. Discuss *either* of the two questions :—(*a*) Whether Utilitarianism can be applied in practice? (*b*) Whether it would yield a code of disinterested morality?

3. State the ethical theory of the ancient Stoics *or* of Dr. Samuel Clarke.

4. Distinguish (*a*) Legal and Moral, (*b*) Social and Personal, (*c*) Determinate and Indeterminate, Obligations.

5. State the twofold relation of the individual to the State in a democratic country, and the various duties which arise out of these.

6. Explain the function of the Church, and discuss the claim which would place it above, or outside of, the laws of the State.

7. Write a note on Veracity, discussing the place which it ought to occupy in the moral code, and the question whether its obligation is absolute.

8. Explain fully the relation of Benevolence to Justice.

9. Show how the reality of the moral law implies the reality of a Perfect Intelligence.

10. Write a note on the moral aspect of bodily culture.

11. "There are two extremes, against which it is equally necessary to guard, in estimating the value of emotion as a factor of the moral life." Explain.

12. Explain the necessity of specific moral discipline for training the power of the will both in self-restraint and in positive goodness.

B.A. EXAMINATIONS.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

ZELLER'S STOICS, EPICUREANS AND SCEPTICS.

THURSDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiner,..... J. CLARK MURRAY, LL.D.

1. Sketch the history of Stoicism, noticing specially the philosopher from whom it first received sytematic exposition.

2. Explain the Stoical theory of knowledge *or* the materialistic and pantheistic aspect of the Stoical theory of Nature.

3. Give an outline of the Stoical Ethics *or* of the Stoical Theology.

4. Tell what you know of Epicurus and his school.

5. Sketch the Epicurean Science of Nature *or* the Epicurean conception of the Gods.

6. Give an outline of the Epicurean Ethics, *either* in its general principles *or* in application to particular moral relations.

7. Tell what you know of the men connected with the New Academy.

8. Give an outline of the teaching of Pyrrho *or* of Arcesilaus *or* of Carneades.

B.A. EXAMINATIONS.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

THE PHILOSOPHY OF KANT.

SATURDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,..... J. CLARK MURRAY, LL.D.

(*Answer only six questions.*)

1. How are synthetic judgments *a priori* possible? Explain this question.

2. Sketch Kant's exposition of Space.

3. Explain Kant's Table of the Categories.

4. Sketch the Transcendental Deduction of the Categories.

5. Name and state the Principles of the Pure Understanding.

6. What are Ideas, and how are they formed?

7. Explain how the Antinomies of Pure Reason are solved, *or* show that all the arguments for the existence of a Supreme Being ultimately rest upon one.

8. What are the Principle, the Object, and the Motive of Pure Practical Reason?

9. Explain the Antinomy of Pure Practical Reason and its solution.

10. Sketch *either* the Analytic *or* the Dialectic of Teleological judgment.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY, 1895.

SPENCER, *First Principles.* MILL, *Logic*, BK. VI.

SATURDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiners, ... { J. CLARK, MURRAY, LL.D. P. T. LAFLEUR M.A.

1. Give Spencer's argument maintaining the impossibility of establishing any *one* ultimate religious idea, and any *one* ultimate scientific idea. Express your own opinion as to the philosophical value of the argument.

2. What does Spencer mean by *The Reconciliation?* Criticise this considered as a philosophical result.

3. Make notes on: Spencer's conception and definition of Philosophy; the transformation and equivalence of forces; the rhythm of motion, segregation.

4. Show the Law of Evolution in its application to any *one* department of human enquiry or interest, great or small.

5. What does Mill mean by the word *Necessity* in relation to man's moral nature? State briefly *your own* opinion as to the probable influence of this view on individual conduct.

6. Give some idea of the method Mill proposes for the study of what he calls *Ethology*.

7. What are Mill's objections against the "abstract method" in sociology? Are these objections valid?

B.A. EXAMINATIONS, 1895.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

ARISTOTLE'S NICOMACHEAN ETHICS.

TUESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Answer only seven questions.

1. State and explain Aristotle's classification of the virtues.

2. State and illustrate by two examples his definition of Ethical Virtue.

3. In what sense does Justice come under this definition?

4. Distinguish different kinds of Justice.

5. Distinguish the Dianoetic Virtues.

6. Discuss any two of the questions:—(*a*) Can a man be unjust to himself? (*b*) Is it worse to do or to suffer injustice? (*c*) Is intemperance in anger worse than intemperance in appetite?

7. Distinguish the different kinds of Friendship *or* the different kinds of Self love.

8. Show how Friendship is affected by the different forms of government.

9. Discuss *either* of the questions:—(*a*) In what cases may a friendship be dissolved? (*b*) How many friends ought a man to have?

10. Explain Aristotle's definitions of Pleasure and of Happiness.

B.A. EXAMINATIONS, 1895.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

GREEN'S PROLEGOMENA TO ETHICS.

THURSDAY, APRIL 18TH, 1895:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Write on any seven of the following subjects:—

1. The idea of a natural science of Morals.

2. Knowledge may be of events or phenomena, but cannot be itself a phenomenon or event.

3. *Motive* as distinguished from *want*.

4. The intrinsic nature of moral good.

5. The personal, *or* the formal, character of the moral ideal.

6. The origin, *or* the development, of the idea of a common good.

7. The Greek and the modern conceptions of virtue.

8. The practical value of the moral ideal.

9. The practical value of a theory of the moral ideal.

10. Mr. Sidgwick's view of the Ultimate Good.

B.A. EXAMINATIONS, 1895.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

JAMES' PRINCIPLES OF PSYCHOLOGY, VOL. II.

SATURDAY, APRIL 20TH, 1895:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Write on any six of the following subjects:—

1. The Law of Contrast, *or* the "eccentric projection" of sensations.

2. Differences of Imagination.

3. The theory of "local signs," *or* the perception of space by the blind.

4. The relation of Belief and Will.

5. The diffusive effects of sensation.

6. What principles interfere with the uniformity of instincts?

7. A summary of the objections to James' theory of the emotions, with his replies.

8. Pleasure and pain are not the only springs of action.

9. A note on Hypnotism.

10. Herbert Spencer's theory of necessary truths.

B.A EXAMINATIONS.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

SPINOZA'S ETHICS.

MONDAY, APRIL 22ND :—MORNING, 9 TO 12.

Answer only eight questions.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain the method adopted by Spinoza in the Ethics, and make any critical remarks on its applicability to Philosophy.

2. Give, with critical remarks, the three definitions of the first Part which determine a large portion of the Ethics.

3. Explain fully Spinoza's doctrine of Causality.

4. Discuss the question, whether Spinoza succeeds in overcoming the Dualism inherent in the system of Descartes.

5. To what extent does the doctrine of Spinoza coincide with the Occasionalism of Geulincx and with the Agnosticism of Spencer?

6. "Ordo et connexio idearum idem est ac ordo et connexio rerum" Explain this, and notice a "concatenatio idearum" different from that which is recognised here.

7. Give Spinoza's distinction of the three kinds of knowledge.

8. Give also his distinction of the "affectus primitivi."

9. Distinguish adequate and inadequate causes, action and passion; and state when an "affectus" is passive, when active.

10. Explain fully Spinoza's definitions of *perfectum* and *imperfectum*, of *bonum* and *malum*.

11. Point out any coincidence between the ethical theory of Spinoza and that of Hobbes.

12. Give a brief outline of the fifth Part of the Ethics.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

MODERN PHILOSOPHY.

WEDNESDAY, 24TH APRIL :—MORNING, 9 TO 12.

Examiners,..... { J. CLARK MURRAY, LL.D. / P. T. LAFLEUR, M.A.

N.B.—*Write answers to* A *and* B *in separate books.*

A.

1. Give some account of the revolt against Aristotelianism, *or* of the great discoveries and inventions, by which the expansion of the European mind was stimulated about the dawn of modern history.

2. Give an outline of the philosophy of Descartes.

3. Explain Leibnitz's Monadology and Theory of a Pre-established Harmony.

4. Give some account of Hobbes, *or* of Locke, *or* of Hume.

B.

1. Why has the general tendency of English philosophy been empirical? Discuss, with some fulness, any *one* of the causes assigned.

2. What are respectively the strong and the weak points in Hartley's psychological teaching?

3. Express some opinion concerning the value of Burke's fundamental positions in relation to political theories.

4. Explain the meaning of *Utilitarianism* as expounded by Bentham. Show how he applied his theory to the Defence of Usury.

SESSIONAL EXAMINATIONS.

THURSDAY, APRIL 18TH, 1895 :—9 TO 12 A.M.

THIRD YEAR—FRENCH.

Examiners,..... { P. J. DAREY, LL.D. / REV. J. L. MORIN, M.A.

1. Quand Corneille vécut-il? Où naquit-il?

2. Faites l'analyse des deux premiers actes du *Cid*. D'où Corneille a-t-il tiré le sujet du *Cid*? Par qui le *Cid* fut-il attaqué? Pourquoi?

3. Quels autres drames Corneille a-t-il écrit? Quels sont ses meilleurs?

4. Traduisez :

Sire, ainsi ces cheveux blanchis sous le harnois,
Ce sang pour vous servir prodigué tant de fois,
Ce bras jadis l'effroi d'une armée ennemie,
Descendaient au tombeau tout (*a*) chargés d'infamie,
Si je n'eusse produit un fils digne de moi,
Digne de son pays, digne de son roi.
Il m'a prêté sa main, il a tué le comte ; (*b*)
Il m'a rendu l'honneur, il a lavé ma honte.
Si montrer du courage et du ressentiment
Sur moi seul doit tomber l'éclat de la tempête :
Quand le bras a failli, on en punit la tête.
Qu'on nomme crime ou non ce qui fait nos débats, (*c*)
Sire, j'en suis la tête, il n'en est que le bras.
Si Chimène se plaint qu'il a tué son père,
Il ne l'eût jamais fait, si je l'eusse pu faire.
Immolez donc ce chef (*d*) que les ans vont ravir,
Et conservez pour vous le bras qui peut servir.

LE CID, Ac. II, Sc. VIII.

Qui est-ce qui parle dans le morceau ci-dessus ?

5. (*a*) Pourquoi *tout* est-il invariable ? Pourrait-on dire *tous chargés ?* (*b*) Écrivez les homonymes de *comte.* (*c*) Comment appelez-vous ce qui fait ces débats ? (*d*) Quelle est la signification du mot *chef ?*

6. Traduisez :

"I am inclined to believe, answered Pekuah, that he was for some time in suspense; for notwithstanding his promise, whenever I proposed to dispatch a messenger to Cairo, he found some excuse for delay. While I was detained in his house he made many incursions into the neighbouring countries, and perhaps he would have refused to discharge me, had his plunder been equal to his wishes. He returned always courteous, related his adventures, delighted to hear my observations, and endeavoured to advance my acquaintance with the stars. When I importuned him to send away my letters, he soothed me with professions of honour and sincerity; and when I could be no longer decently denied, put his troop again in motion, and left me to govern in his absence. I was much afflicted by his studied procrastination, and was sometimes afraid that I should be forgotten, but that you would leave Cairo, and must end my days in an island of the Nile.

RASSELAS, *Chap.* XXXIX.

7. Quels sont les quatre plus grands auteurs du XVIIe siècle ? Dans quel genre de littérature se sont-ils distingués ? Nommez leurs principaux ouvrages.

8. Qui est-ce qui a écrit le *Vert-Vert?* Qu'est-ce que le *Vert-Vert?* Quels ouvrages André Chenier a-t-il écrits? Comment finit-il sa vie? Quand?

9. Quels sont les trois plus grands historiens du XIXe siècle? Quels sont leurs ouvrages? Citez les deux romanciers les plus remarquables. Donnez les titres de leurs ouvrages.

10. Translate:

Parlez au suisse, il vous dira si M. le duc est à la maison. Mettez un frein à vos dépenses. Nous avons eu un aloyau à dîner aujourd'hui. Il ne disconvient pas que vous n'ayez raison. Je n'ai que faire de vous dire que cela m'a plu. Cette affaire est bien embrouillée; je m'y perds.

He did all he could to deceive me as to his intentions, that is where I was watching him. You carry your arm in a sling; what has happened? I don't know how you manage it, but you look always so tidy. As for me, if I were in his place I should do it; I should not let anything stand in my way.

COGERY.

HONOUR EXAMINATIONS.

FRENCH.

THIRD YEAR.

SATURDAY, APRIL 20TH, 1895:—MORNING, 9 TO 12.

Examiners, ... { P. J. DAREY, LL.D. / J. L. MORIN, M.A.

1. Traduisez les passages suivants de *Phèdre*, indiquez en le contexte et la place dans l'action de la pièce:—

(*a*) Ah! Seigneur, si votre heure est une fois marquée,
Le ciel de nos raisons ne sait point s'informer.
Thésée ouvre vos yeux en voulant les fermer;
Et sa haine, irritant une flamme rebelle,
Prête à son ennemie une grâce nouvelle.

(*b*) Juste ciel! tout mon sang dans mes veines se glace.
O désespoir! ô crime! ô déplorable race!
Voyage infortuné! Rivage malheureux!
Fallait-il approcher de tes bords dangereux?

(*c*) Modérez des bontés dont l'excès m'embarrasse.
D'un soin si généreux honorer ma disgrâce,
Seigneur, c'est me ranger, plus que vous ne pensez,
Sous ces austères lois dont vous me dispensez.

(*d*) N'importe, écoutons tout et ne négligeons rien.
Examinons ce bruit, remontons à sa source.
S'il ne mérite pas d'interrompre ma course,
Partons ; et quelque prix qu'il en puisse coûter,
Mettons le sceptre aux mains dignes de le porter.

(*e*) Va trouver de ma part ce jeune ambitieux,
Oenone ; fais briller la couronne à ses yeux,
Qu'il mette sur son front le sacré diadème ;
Je ne veux que l'honneur de l'attacher moi-même.
Cédons-lui ce pouvoir que je ne puis garder.
Il instruira mon fils dans l'art de commander ;
Peut-être il voudra bien lui tenir lieu de père.

(*f*) Que vois-je ? Quelle horreur en ces lieux répandue
Fait fuir devant mes yeux ma famille éperdue ?
Si je reviens si craint et si peu désiré,
O ciel, de ma prison pourquoi m'as-tu tiré ?
Je n'avais qu'un ami.

2. Finissez l'analyse de Phèdre.

3. (*a*) Esquissez à grands traits le tableau de la société française sous le règne de Louis XIV. (*b*) D'où vient l'appellation de siècle de Louis XIV ? (*c*) Quels effets produisit sur les écrivains la protection de Louis XIV ?

4. (*a*) Qu'est-ce que Louis XIV a fait pour le cartésianisme ? (*b*) Quel était le caractère de Descartes ? (*c*) Comment traite-t-il la morale ? (*d*) Faites connaître sa méthode. (*e*) Indiquez les caractères généraux de l'influence exercée par Descartes sur les esprits. (*f*) Son style.

5. Parlez brièvement de l'origine, de la position et du caractère de Madame de Motteville ; des diverses parties de son œuvre, de son style.

6. (*a*) Faites connaitre en quoi consiste la supériorité de Bossuet, (*b*) ses procédés de style et de composition. (*c*) L'horizon de Bossuet, ses limites.

7. Traduisez :

(*a*) The next morning we were again visited by Mr. Burchell, though I began, for certain reasons, to be displeased with the frequency of his return ; but I could not refuse him my company, and my fireside. It is true, his labour more than requited his entertainment ; for he wrought among us with vigour, and, either in the meadow or at the hay-rick, put himself foremost. Besides, he had always something amusing to say that lessened our toil, and was at once so out-of-the way and yet so sensible that I loved, laughed at, and pitied him.

(*b*) "My patience," continued my son, "was now quite exhausted. Stung with the thousand indignities I had met with, I was willing to cast myself away, and only wanted the gulf to receive me. I regarded myself as one of those vile things that nature designed should be thrown by into her lumber-room, there to perish in obscurity. I had still, however, half-a guinea left, and of that I thought Fortune herself should not deprive me, and in order to be sure of this, I was resolved to go instantly and spend it while I had it, and then trust to occurrences for the rest."

The Vicar of Wakefield.

SESSIONAL EXAMINATIONS, 1895.

WEDNESDAY, APRIL 17TH:—9 TO 12 A.M.

FOURTH YEAR.

FRENCH.

Examiners,..... ..... { P. J. DAREY, LL.D. / REV. J. L. MORIN, M.A.

1. Quel est le but moral le plus élevé que puisse se proposer le drame ?

2. Quels étaient les précurseurs de Corneille ? Quel âge avait Corneille lorsqu'il fit représenter le *Cid* ? Où la scène se passe-t-elle ? A quelle époque est-ce que vivait Don Rodrique ? Qui est-ce qui avait déjà écrit sur ce sujet-là ? Est-ce une pièce morale ou non ?

3. Faites l'analyse des trois derniers actes *du Cid*.

4. Quel est le dénouement *du Cid* ? Qu'est-ce que vous pensez du rôle de l'Infante dans *le Cid* ? Citez quelques vers *du Cid*.

5. Traduisez :—

Sire, vous avez su qu'en ce danger pressant (*a*)
Qui jeta dans la ville un effroi si puissant,
Une troupe d'amis chez mon père assemblée
Sollicita mon âme encor toute troublée.....
Mais, sire, pardonnez à ma témérité ;
Le péril approchait, leur brigade était prête ;
Me montrant à la cour, je hasardais ma tête,
Et s'il fallait la perdre, il m'était bien plus doux
De sortir de la vie en combattant pour vous.

LE CID, AC. IV., SC. III.

6. Traduisez :—Jamais à son sujet un roi n'est redevable. Marchons sans discourir. Son esprit amoureux n'aura-t-il point d'ombrage. Je saurai bien rabattre une humeur si hautaine. Ce sang qui tout sorti fume encore de courroux. Sur moi seul doit tomber l'éclat de la tempête.

7. Traduisez :—Silence gives consent. You have put your heads together. When he enters a drawing-room he has a very awkward air. I beg of you not to say anything about it. Can you sing at sight? He is a slanderer. Look at it twice before you do it. If I had the thing entirely left in my own hands I should succeed. He must be sick of having two lazy fellows on his hands. My daughter has not yet regained her usual spirits.

Il m'a pris a l'écart pour me dire cela. Ils ont l'air d'avoir été jetés dans le même moule. Craignez-vous qu'il ne sache pas se tirer d'affaire?

8. Quand et où naquit M. Guizot. Racontez sa carrière. À quoi se voua-t-il? Donnez la liste de ses ouvrages.

9. Qui est-ce qui a écrit l'histoire des *Ducs de Bourgogne* et *l'histoire es Croisades?* Et quelles autres histoires ont-ils publiées?

10. Qui est-ce qui a écrit les *Paroles d'un croyant?* Dites tout ce que vous savez sur cet auteur.

11. Quels sont les ouvrages d'*Alfred de Vigny?*

12. Nommez six drames de *Victor Hugo.* Quelle nouvelle école a-t-il fondée? A laquelle était-elle opposée?

13. Qui est-ce qui a écrit l'Ode qui commence ainsi :—

"Mes sœurs, l'onde est plus fraîche aux premiers feux du jour!
Venez, le moissonneur repose en son séjour;

14. Traduisez :

We sailed from Peru where we had continued by the space of one whole year, for China and Japan, by the South Sea, taking with us victuals for twelve months; and had good winds from the east, though soft and weak, for five months' space and more. But then the wind came about and settled in the west for many days, so as we could make little or no way, and were sometimes in purpose to turn back. But then again there arose strong and great winds from the south, with a point east, which carried us up for all we could do, towards the north; by which time our victuals failed us, though we had made good spare of them.

Bacon's New Atlantis.

HONOUR EXAMINATIONS.

FRENCH.

THIRD YEAR.

THURSDAY, APRIL 11TH, 1895:—9 TO 12 A.M.

Examiners,..... { P. J. DAREY, M.A., LL.D.
J. L. MORIN, M.A.

1. Quelles sont les périodes de la vie littéraire de Boileau, et à laquelle appartient l'*Art poétique*?

2. "L'Art poétique était la plus solide réponse que Boileau pût opposer à ses détracteurs," dit Paul Albert. Justifiez cette assertion.

3. En combien de chants l'Art poétique se divise-t-il? De quoi chacun traite-t-il?

4. Citez quelques préceptes de Boileau sur l'art d'écrire, et quelques définitions de genres de poésie.

5. Faites l'analyse de la tragédie d'Horace.

6. Indiquez le *nœud*, la *péripétie* et le *dénoûment* de cette pièce.

7. Quelles sont les passions qui forment les ressorts de l'action dans cette tragédie? Développez votre réponse.

8 Qu'est-ce ci, mes enfants? Ecoutez-vous vos flammes?
Et perdez-vous encor le temps avec des femmes?
Prêts à verser du sang, regardez-vous des pleurs?
Fuyez, et laissez-les déplorer leurs malheurs.

(*a*) Montrez que ces paroles sont bien conformes au caractère de celui qui les prononce. (*b*) A qui et à quoi ce rapportent-elles? (*c*) Quel en est le contexte?

9. (*a*) Expliquez dans quel sens on peut dire que La Fontaine était créateur. (*b*) Pourquoi ne figure-t-il pas dans l'*Art poétique*? (*c*) Pourquoi Louis XIV lui fut-il hostile?

10. Traitez le sujet de *la morale dans les Fables*.

11. Résumez en quelques mots les fables dont voici la morale: (*a*) La raison du plus fort est toujours la meilleure. (*b*) En toute chose il faut considérer la fin.

(*c*) Apprenez que tout flatteur
Vit aux dépens de celui qui l'écoute.

(*d*) Plus fait douceur que violence.

12. Traduisez :

Moyennant quoi. Mainte caresse. A qui mieux mieux. Chichement. Plus d'amour, partant plus de joie. Il n'en peut mais.

Bâiller aux chimères. Elle accourut à point.

Les gens avaient pris justement
Le contre-pied du testament.

Il pensa perdre la vie. Il avait beau chercher. Rien qui vaille. Un tiens vaut mieux que deux tu l'auras. Vous en viendrez à bout. Peu ni

---

B.A. HONOURS.

WEDNESDAY, APRIL 17TH, 1895 :—MORNING, 9 TO 12.

Examiners, ... { P. J. DAREY, LL.D. / Rev. J. L. MORIN, M.A.

1. Par quel genre le neutre latin est-il représenté en français ? Citez des exceptions.

2. Comment exprimait-on le pronom personnel dans l'ancienne langue ? Comment disait-on, *Son père arrive-t-il ? Moi et toi nous irons.*

3. Quand les mots le mien, le tien sont-ils employés comme adjectifs ?

4. *Traduisez :* Li gaaingnour vont chacuns labourer en sa terre à une charrue sans rouelles du *quoi* ils il tornent dedens la terre les fourmens, et Trois toyses dou tyson sur *quoi* nostre neiz estait fondée. Qu'est-ce que vous remarquez sur les mots *quoi ?*

5. Comment le *participe passé* s'accorde-t-il dans l'ancienne langue ?

6. Quand est-ce que le Drame de Hernani fut représenté ?

7. Quelles sont les *trois* unités qu'on doit observer d'après Aristote, dans un drame ?

8. Les a-t-on observées dans *Hernani* ? Expliquez votre réponse.

9. Qu'est-ce qu'un *Drame* ?

10. Quels sont les titres des différents actes de *Hernani ?*

11. *Traduisez :* Cachons-nous dans l'armoire. Entrez-y. Je m'en charge. Nous y tendrons tous deux. Voilà des belles équipées. Poussez au drôle une estocade.

12. *Dona sol* O ciel ! Au secours ! *Hernani.* Taisez-vous.
Dona sol : Vous donnez l'éveil aux yeux jaloux.

Quand je suis près de vous, veuillez, quoi qu'il advienne,
Ne réclamer jamais d'autre aide que la mienne.

A *Don Carlos* : que faisiez-vous là ?

DON CARLOS.

Moi ? Mais, à ce qu'il paraît.
Je ne chevauchais pas à travers la forêt.

HERNANI.

Qui raille après l'affront s'expose à faire rire
Aussi son héritier.

13. A quelle époque remonte *la Chanson de Roland*? Quel est le sujet de cette *chanson* ?

Traduisez :—

Rodlanz ferit en une piédre bise,
Plus en abat que jo ne vos sai dire ;
L'espéde croist, ne froisset ne ne briset,
Contre lo ciel a mont est ressortide.
Quand veit li cons que ne la fraindrat mie,
Molt dolcement la plainst a sei medisme :
"E ! Durandal, com iés bèl e saintisme !
En l'orie point assez i at reliques,
Un dent saint Piédre e del sanc saint Basilie,
E des chevéls mon seignor saint Denisie ;
Del vestiment i at sainte Marie :
Il nen est dreiz que paién te baillissent :
De crestiiens devez estre servide.

Chanson de Roland.

Quant ot li pédre ço que dit at la chartre,
Ad ambes mains deront sa blanche barbe.
"E ! filz," dist-il "com doloros message !
Vis atendeie qued a mei repaidrasses
Par Deu mercit que tum reconfortasses.

A halte voiz prist li pédre a crider :
"Filz Alexis quéls duels m'est presentez
Malvaise guarde t'ai fait soz mon degrét
A las pechables com par fui avoglez !
Tant l'ai vedut si nel poi aviser !

Vie de Saint Alexis.

Buona pulcella fut Eulalia
Bel avret corps, bellezour anima.
Voldrent la veintre li Deo inimi
Voldrent la faire diavle servir
El nout eskoltet les mals conseillers
Qu'elle Deo reneiet chi maent sus en ciel,
Ne por or ned argent ne paramenz
For manatce regiél ne preiement.

Prose de Ste. Eulalie.

B.A. HONOURS, 1895.

VENDREDI, 19 AVRIL—9 à 12 A.M.

Examinateur, ... P. J. DAREY, LL.D.

1. Expliquez le titre : *Philosophe sous les toits.* Pourquoi Emile Souvestre a-t-il ainsi appelé cet ouvrage ?

2. Faites le résumé des 3me et 4me chapitres du Philosophe sous les toits.

3. *Traduisez :* La cheminée de leur mansarde est si grande qu'une falourde y produit l'effet d'une allumette. La grand'mère avait bien parlé d'un poêle marchandé chez le revendeur du rez-de-chaussée. Le riche blasé par l'usage se laisse gagner plus difficilement. Enfin, poussé à bout par cet egoïsme brutal, je passe des remontrances aux reproches. Voyez-moi ces innocents, comme ça se régale. Chers enfants, leurs mères me revaudront ça en paradis.

4. *Translate:*

Jacques. All the world's a stage,
And all the men and women merely players :
They have their exits and their entrances,
And one man in his time plays many parts,
His acts being seven ages. At first the infant
Mewling and puking in the nurse's arms ;
Then the whining school-boy, with his satchel
And shining morning face creeping like a snail
Unwillingly to school. And then the lover,
Sighing like a furnace, with a woeful ballad
Made to his mistress eyebrow. Then a soldier,
Full of strange oaths, and bearded like a pard,
Jealous in honor, sudden and quick in quarrel,
Seeking the bubble reputation

Even in the cannon's mouth. And then the justice
In fair round belly with good capon lin'd
With eyes severe and beard of formal cut,
Full of wise saws and modern instances;
And so he plays his part.

AS YOU LIKE IT, Act II., Sc. VII.

5. Quels étaient les mystères? Citez le plus célèbre.

6. Faites connaître la vie et les écrits de Commynes.

7. Quand est-ce que les Bude, les Amyot, les Etienne parurent? Quel genre littéraire cultivèrent-ils?

8. A quelle époque remonte la fondation du Collège de France? Quelles furent les objections qui s'élevèrent à propos de sa fondation? Qu'est-ce qu'on devait y étudier?

9. Qui a publié *la Conformité du langage français avec le grec?* Quel autre ouvrage du même genre ce même a-t-il encore publié?

10. Qui était Ramus? Où mourut-il?

11. Faites connaître l'œuvre de Rabelais. La place qu'il occupe dans le mouvement de la Renaissance.

12. Faites une courte biographie de Calvin, ses voyages, sa vocation. L'homme, sa vie, son caractère et ses écrits.

13. Faites connaître Montluc—sa vie militaire—Style *des Commentaires*—Quelle sa devise? Quel genre de vie préfèra-t-il? Sous quel roi vécut-il? Rappelez une célèbre conférence qu'il eut avec lui. Au siège de quelle ville se couvrit-il de gloire? Où raconte-t-il les incidents de ce siège? Combien de temps dura le siège? Où est-ce qu'il combattit contre ses compatriotes? Par qui y fut-il envoyé? Sous qui était-il? Décrivez le caractère de ces deux hommes. Comment traitât-il les Huguenots? Quelles épreuves eut-il dans sa vieillesse? Qui est-ce qui lui fit, en quelque sorte, son oraison funèbre?

B.A. HONOURS.

FRANÇAIS.

MERCREDI, LE 24 AVRIL 1895:—DE 9 À 12 A.M.

Examinateurs, ... { P. J. DAREY, LL.D. / REV. J. L. MORIN, M.A.

1. A quel genre de comédie le *Misanthrope* appartient-il?

2. Quel est le caractère de *Célimène?* et celui d'*Arsinoé?*

3. Quelles sont les meilleures scènes du *Misanthrope?*

4. Donnez-en le résumé.

5. Quel est le caractère opposé à celui de Célimène?

6. Ecrivez le dénouement du Misanthrope.

7. Quelles sont les meilleures *comédies* de Molière?

8. Et quelles sont celles qu'on peut appeler ses *farces?*

9. Quand La Rochefoucauld naquit-il? et quand mourut-il? Sous combien de régimes vécut-il? Quel est le caractère de l'homme et quel est celui de ses écrits? Qu'est-ce qu'il a publié? Comme écrivain, quel rang occupe-t-il? et comme philosophe? Qui furent les amies de La Rochefoucauld?

10. Faites connaître les *Maximes.*
Qu'est-ce qui fait vivre le livre des *Maximes?*
Que sont les *Mémoires* de La Rochefoucauld?
Et que sont les *Maximes?*

11. Dites ce que vous savez du Cardinal de Retz. Où La Rochefoucauld et le Cardinal de Retz se rencontrèrent-ils? Quels étaient les caractères de ces deux hommes?

12. Quand et où naquit Montaigne? Sous quels rois vécut-il?

13. Faites une esquisse de la vie de Montaigne. Où voyagea-t-il?

14. Quel ouvrage a-t-il écrit? Comment appelle-t-il cet ouvrage? De quel style s'est-il servi? Quel était son axiome favori? Qui était le grand ami de Montaigne? Comment parle-t-il de l'éducation des enfants?

15. Corrigez en français moderne le morceau suivant pris des Essais de Montaigne:

De la punition de la courdise.

J'ouy aultrefois tenir à un prince et très grand capitaine, que pour lascheté de cœur un soldat ne pouvoit être condemné à mort; luy estant à table faict recit du procez du seigneur de Vervins, qui feut condemné à mort pour avoir rendu Bouloigne. A la vérité, c'est raison qu'on face grande difference entre les faultes qui viennent de nostre foiblesse, et celles qui viennent de nostre malice, car en celles icy nous nous sommes bandez à nostre escient contre les regles de la raison que nature a empreintes en nous; et en celles là, il semble que nous puissions appeller à garant cette mêsme nature, pour nous avoir laissez en telle imperfection et defaillance. De manière que prou de gents ont pensé qu'on ne se pouvait prendre à nous que de ce que nous faisons contre nostre conscience: et sur cette règle est en partie fondee l'opinion de ceulx qui condemnent les punitions capitales aux heretiques et mescreants et celle qui establit qu'un advocat et un juge ne puissent estre tenus de ce quepar ignorance ils ont failly en leur charge.

GERMAN.

FIRST YEAR.

WEDNESDAY, APRIL 10TH :—AFTERNOON, 2 TO 3.30.

Examiner,..... ....L. R. GREGOR, B.A.

German Grammar, Joynes' German Reader.

1. Translate :—

(*a*) Bald darauf kam die Mutter nach Haus. Was muszte sie sehen! Die Hausthür stand offen; die Stühle waren umgeworfen, die Schüsseln in der Küche zerbrochen, Decke und Kissen aus dem Bett gezogen;

(*b*)
Dann wird die Sichel und der Pflug
In deiner Hand so leicht;
Dann singest du beim Wasserkrug,
Als wär' dir Wein gereicht.

(*c*)
Mit eilenden Wolken
Der Vogel dort zieht
Und singt in der Ferne
Manch heimatlich Lied.
So treibt es den Burschen
Durch Wälder und Feld,
Zu gleichen der Mutter,
Der wandernden Welt.

2. Give the other principal parts of the following verbs: kennen, schneiden, kommen, treiben, stehen, glauben, werden, brechen, schlagen, fangen.

3. (*a*) Give six terminations of substantives which are always feminine. (*b*) What is the gender of compound substantives? (*c*) —— of diminutives? (*d*) —— of countries in *ei*?

4. Decline: (*a*) the interrogative pronoun *wer*, (*b*) the singular of *his new book*.

5. Give the three forms of the nom. sing. masc. of any German possessive pronoun. Like what models are they severally declined?

6. (*a*) When does the relative sentence immediately follow its antecedent? (*b*) In what sort of sentence may the prefix of a separable verb be separated from the verb? (*c*) What is the position of a verb in a relative clause? (*d*) How can intransitive verbs be used in the passive voice?

7. Translate:—

(*a*) Have you heard the words of this orator?

(*b*) I have used the book which he sent me.

(*c*) This mother buys her children something useful.

(*d*) The dinner was being served when I arrived.

(*e*) The industrious countryman cut the grass yesterday.

(*f*) We have looked for William's book and ours everywhere.

ARTS AND APPLIED SCIENCE.

INTERMEDIATE.

WEDNESDAY, APRIL 10TH, 1895:—AFTERNOON, 2 TO 4.

Examiner,.....L. R. GREGOR, B.A.

Freytag—Die Journalisten; Uhland—Ballads and Romances; German Grammar.

1. Translate:—

(*a*) Senden

Es stand vortrefflich. Wir hatten 47, die Gegner 42 Stimmen, 8 Stimmen waren noch nicht abgegeben, nur zwei davon für uns, und der Tag war unser. Alles sah nach der Uhr und rief nach den säumigen Wahlmännern. Da polterte es auf dem Vorsaal;

(*b*) Piepenbrink.

Wissen Sie was, Herr Doctor, da Sie den gelbgesiegelten doch schon kennen und ein sehr verständiges Urteil abgegeben haben, wie wär's, wenn Sie ihn hier noch einmal versuchten? Setzen Sie sich zu uns, wenn Sie nichts Anderes vorhaben.

2. Translation at sight. Translate (*a*) or both paragraphs of (*b*).

(*a*) Das furchtbare Unglück, das den „Norddeutschen Lloyd" heimgesucht hat, weckt in den Herzen vieler Deutschen, die mit dem wundervollen Schnelldampfer die „Elbe" den Weg über den Ocean zurückgelegt haben, den schmerzlichsten Wiederhall. Die „Elbe" war es, auf der sich am 15 August die Gäste Henry Willards, die sich zur Einweihung (inauguration) der nördlichen Pacificbahn nach der neuen Welt begaben, einschifften. Damals war die „Elbe" das schönste und schnellste Schiff des Norddeutschen Lloyd und wurde befehligt vom Kapitän W. Willigerod. Uber das Schiff selbst, über die Reisegesellschaft und die Fahrt ist in der „National-Zeitung" aus der Feder ihres Berichterstatters Paul Lindau ausführlich berichtet worden.

(*b*) „Wollen Sie wohl so gefällig sein, diesen Rock bis an das Thor der nächsten Stadt mitzunehmen?" bat ein junger Mann einen Herrn, der ihn in einem Wagen auf der Landstraße einholte. (overtook). „Mit vielem Vergnügen," antwortete der Angeredete sehr artig; „wie wollen Sie ihn aber wieder bekommen?" „O, sehr leicht," antwortete der Fußreisende, „wenn Sie nichts dagegen haben, so bleibe ich drin."

Leſſing kam eines Abends nach Hauſe und klopfte an ſeine Thüre. Der Bediente ſah aus dem Fenſter, erkannte ſeinen Herrn im Dunkeln nicht und rief: „Der Dichter iſt nicht zu Hauſe." —„Schadet nichts," antwortete Leſſing, „ich werde ein andermal wieder kommen," und ging ruhig fort.

3. Translate :—I will have nothing to do with this man. I would not lend him a dollar; he would never pay. Do you remember what I told you last summer? He has the same faults still and I am sorry to say that he is not ashamed of them.

FOR ARTS STUDENTS ONLY.

4. Translate :—

Der König Karl sasz einst zu Tisch
Zu Aachen mit den Fürsten;
Man stellte Wildbrät auf und Fisch
Und liesz auch keinen dürsten.
Viel Goldgeschirr von klarem Schein,
Manch roten, grünen Edelstein
Sah man im Saale leuchten.

FOR ARTS STUDENTS OF McGILL COLLEGE ONLY.

5. Translate the following sentence and explain fully mood and tense of subordinate clauses. (*a*) He knows that he is no longer a child. (*b*) He seemed to affirm that the others did not sing any more, but that the eldest sang as before.

FOR STUDENTS IN APPLIED SCIENCE ONLY.

6. Translate :—

(*a*) Es versteht sich von selbst, dasz diese Operation in einem dunklen, nur von einer Kerze erleuchteten Zimmer vorgenommen werden musz, weil unter dem Einflusz des Tageslichtes das neugebildete Jodsilber sogleich geschwärzt werden würde.

(*b*) Die Stellen, welche die farbigen Streifen im Spektrum einnehmen, bedingen eine chemische Eigenschaft, die so umwan-

delbarer und fundamentaler Natur ist, wie das Atomgewicht der Stoffe, und lassen sich daher mit einer fast astronomischen Genauigkeit bestimmen.

FOR AFFILIATED COLLEGES ONLY.

7. Give the rules for the construction of indirect statements and questions. Translate: When the peasant asked the traveller what o'clock it was, he told him it was half past five.

THIRD YEAR ORDINARY.

APRIL 1ST, 1895:—MORNING, 9 TO 12.30.

Examiner,.....L. R. GREGOR, B.A.

Minna von Barnhelm, Die Belagerung von Antwerpen, German. Grammar, German Literature.

N.B.—Questions expressed in German are to be answered in German.

1. Translate:—

(*a*) Weil aber Zeit erfordert wurde, einen Plan von diesem Umfang in Erfüllung zu bringen, so begnügte man sich an den Kanälen zahlreiche Basteien anzulegen und dadurch die Zufuhr zu erschweren. Zugleich wurden in der Nähe dieser Städte und gleichsam an den Thoren derselben spanische Besatzungen einquartiert, welche das platte Land verwüsteten, und durch ihre Streifereien die Gegenden umher unsicher machten.

(*b*) Und wie man nun gar eins der Feuerschiffe nach dem andern ohne alle weitere Wirkung erlöschen sah, so verlor sich endlich die Furcht, und man fing an, über die Anstalten des Feindes zu spotten, die sich so prahlerisch angekündigt hatten, und nun ein so lächerliches Ende nahmen. Einige der Verwegensten warfen sich sogar in den Strom, um den Brander in der Nähe zu besehen und ihn auszulöschen, als derselbe vermittelst seiner Schwere sich durchrisz, das schwimmende Werk, das ihn aufgehalten, zersprengte und mit einer Gewalt, welche alles fürchten liesz, auf die Schiffbrücke losdrang.

(*c*) Paul Werner. Das ist kein unebenes Frauenzimmerchen! — Aber ich hätte ihr doch nicht versprechen sollen zu warten. — Denn das Wichtigste wäre wohl, ich suchte den Major auf.— Er will mein Geld nicht und versetzt lieber? — Daran kenn' ich ihn.

(*d*) Der Wirt. Wir Wirte sind angewiesen, keinen Fremden, wes Standes und Geschlechts er auch sei, vierundzwanzig Stunden zu behausen, ohne seinen Namen, Heimat, Charakter, hiesige Geschäfte, vermutliche Dauer des Aufenthalts und so weiter gehörigen Orts schriftlich einzureichen.

(*e*) Lieber Major, das Lachen erhält uns vernünftiger als der Verdrusz. Der Beweis liegt vor uns. Ihre lachende Freundin beurteilt Ihre Umstände weit richtiger als Sie selbst. Weil Sie verabschiedet sind, nennen Sie sich an Ihrer Ehre gekränkt; weil Sie einen Schusz in dem Arme haben, machen Sie sich zu einem Krüppel. Ist das so recht? Ist das keine Übertreibung? Und ist es meine Einrichtung, dasz alle Übertreibungen des Lächerlichen so fähig sind? Ich wette, wenn ich Ihren Bettler nun vernehme, dasz auch dieser ebensowenig Stich halten wird.

2. Give the substance of Goethe's criticism of Minna von Barnhelm.

3. Discuss the introduction of Riccaut de la Marlinière.

4. Comment on the following :—

(*a*) Die Weisen aus dem Morgenlande kenn' ich wohl, die ums Neujahr mit dem Sterne herumlaufen.

(*b*) Dein schönes Schulzengericht.

(*c*) den ersten blessirten armen Soldaten.

(*d*) Veritabler Danziger! echter, doppelter Lachs!

(*e*) Denke Er nicht mehr daran.

5. Which syllables receive the primary accent in the following verbs? vollenden, to complete; übersetzen, to translate; hintergehen to deceive; wiederholen, to fetch again; unterschreiben, to writ, beneath; verlassen, to abandon.

6. Translate :—He said that he had been obliged to do it. Comment fully on the verbs of the subordinate clause in this sentence.

7. When is *there is* translated by *es ist* and when by *es giebt*?

8. Translate:—

(*a*) Can you tell me how this word is pronounced in German? I have looked for it in the dictionary, but I have only a pocket dictionary and I have not been able to find it.

(*b*) Goethe began his Faust in youth and completed it in the last year of his life. I know no other great work which occupied its author so long. It has been frequently translated into English. Bayard Taylor's translation reproduces the original metre with great skill.

(*c*) How are you? I feel pretty well. You look unhappy. What is the matter? I have lost my dog, my faithful companion. I wonder if I shall ever see him again.

9. Welches sind die mytischen Züge des Nibelungenlieds?

10. Geben Sie eine kurze Lebensbeschreibung Walthers von der Vogelweide.

11. Was sagt Tacitus von den Göttern und Helden der Deutschen.

12. Geben Sie die Namen einiger Satiriker des 16 Jahrhunderts.

13. Erzählen Sie die Legende vom ewigen Juden.

14. Was wissen Sie von den evangelischen Kirchenliedern des 16, 17 Jahrhunderts?

15. Mit welchen griechischen Gedichten vergleicht man zuweilen das Nibelungenlied und das Gudrunlied?

B. A. AND THIRD YEAR HONOURS.

Maria Stuart, Nathan der Weise, Laokoon, Kluge's History of Literature, German Grammar.

TUESDAY, APRIL 2ND :—MORNING, 9 TO 12.30.

Examiner,..... .....L. R. GREGOR, B.A.

N.B.—Questions expressed in German are to be answered in German.

1. Translate Maria Stuart, Act I, Scene 7. Die Richter..... vereinigen.

2. Translate Nathan der Weise, Act III, Scene 6. Hm! hm!.....behutsam gehen.

3. Translate Laokoon. Ch. XII, Homer..... werden.

4. Comment briefly on (*a*) Prediger des Bergs, (*b*) Themis, (*c*) Jetzo, (*d*) Das ist bei uns Rechtens, (*e*) Die königliche Mutter von Frankreich, (*f*) Hochwürdiges.

5. Explain fully the employment of the Imperfect and Perfect Indicative. Give well composed sentences in illustration.

What parts of the verb are used in exclamatory clauses with the force of an Imperative? Give examples.

6. Translate:—Hoping to see you soon, I remain etc. Recovering himself the orator continued. I wrote to K, inviting him to pass his holidays with us, and by return post received a letter, saying we might expect him in a fortnight.

7. Charakterisieren Sie den Heliand nach den Inhalt und nach der Form.

8. Wie hat Karl der Große die Bildung der Geistlichen gefördert?

9. Nennen Sie die vier bedeutendsten Dichter des höfischen Epos.

10. Welche lateinischen Gedichte behandeln die Tiersage im 10, 11, 12 Jahrhundert?

11. Geben Sie den Hauptinhalt vom Parzival oder vom zweiten Theil des Nibelungenlieds an.

12. Wer hat das Nibelungenlied verfaßt? Erklären Sie die Lachmann'sche Liedertheorie.

13. Was wissen Sie (*a*) von den Merkern (*b*) von den Stoffen (*c*) von den Weisen der Meistersänger?

14. Erläutern Sie die Entwickelung des Dramas aus dem religiösen Kultus.

15. Geben Sie eine kurze Lebensbeschreibung Jean Pauls.

16. Wie hieß A. W. von Schlegel's erste kritische Zeitschrift? Worüber hat er (*a*) in Berlin, (*b*) in Wien Vorlesungen gehalten? Was halten Sie für sein Hauptverdienst? Welche Romantiker sind zur katholischen Kirche übergetreten? Was wissen Sie von dem Roman Lucinde?

17. Unter welchem Titel erschienen Körner's gesammelte Lieder? In was für Gedichten liegt die Bedeutung von Uhland?

B. A. HONOURS.

MONDAY, APRIL 8TH :—MORNING, 9 TO 12.30.

Examiner,.....L. R. GREGOR, B.A.

Die Abderiten, Hermann und Dorothea, Selection from Heine's songs, Die Jungfrau von Orleans, Macmillan's German Composition, Behaghel's Deutsche Sprache.

N.B.—Questions expressed in German are to be answered in German.

1. Translate :—

(*a*) Wiewol nun diese Verfahrungsweise überhaupt Niemanden, der die Abderiten aus der vorhergehenden wahrhaften Geschichtsdarstellung kennen gelernt hat, befremden wird, so glauben wir doch, solchen Lesern, welche eine Geschichte nur alsdann recht zu wissen glauben, wenn ihnen das Spiel der Räder und Triebfedern mit dem ganzen Zusammenhange der Ursachen und Folgen einer Begebenheit aufgeschlossen wird, keinen unangenehmen Dienst zu erweisen, wenn wir ihnen etwas umständlicher erzählen, wie es zugegangen, dasz dieser Handel — der in seinem Ursprunge nur zwischen Leuten von geringer Erheblichkeit und über einen äuszerst unerheblichen Gegenstand vorwaltete — wichtig genug werden konnte, um zuletzt die ganze Republik in seinen Strudel hineinzuziehen.

(*b*) Nach Kevlaar ging Mancher auf Krücken
Der jetzo tanzt auf dem Seil,
Gar Mancher spielt jetzt die Bratsche
Dem dort kein Finger war heil.

Die kranken Leute bringen
Ihr dar, als Opferspend'
Aus Wachs gebildete Glieder
Viel wächserne Füsz' und Händ.'

(*c*) Hermann und Dorothea, Polyhymnia, Aber es....Schicksal.

(*d*) Die Jungfrau von Orleans, Prologue, Denn wenn .... krönen.

(*e*) Die Jungfrau, Act IV., Scene 1, Und einer Freude.....Königssohne.

2. (*a*) Was sagt Kotzebue von Lionels Helm? (*b*) Was wollte Schiller mit der gereimten Rede des Königs andeuten?

3. Translate into German:—From that day the feet refused to walk, the hands to work, the teeth to grind, the eyes to look out, the ears to listen. But need I say what happened? The stomach being reduced to inanity, the whole body soon began to suffer and to decay.

4. "Die zur ersten Lautverschiebung gehörigen Thatsachen lassen sich unter drei Hauptregeln zusammenfassen." Geben Sie ohne Erläuterung dieselben an.

5. Wodurch ist der starke Unterschied zwischen dem Englischen und der Sprache der festländischen Germanen bedingt?

6. Wie verhält es sich mit den Endsilben im Neuhochdeutschen und im Althochdeutschen?

7. Welche Einschränkung hat der Gebrauch der deutschen Sprache zu Anfang der neuhochdeutschen Periode im Innern des Gebietes erfahren?

8. Erläutern Sie näher die folgende Behauptung. "Man pflegt Luther als den Schöpfer der neuhochdeutschen Schriftsprache zu bezeichnen."

THIRD YEAR HONOURS.

SATURDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....L. R. GREGOR, B.A.

Die Jungfrau von Orleans, Wilhelm Tell, Behaghel's Deutsche Sprache.

N.B.—Questions expressed in German are to be answered in German.

1. Translate:—

(*a*) Die Jungfrau von Orleans, Act II, Scene 10. Uns treibt.... Sinnbild.

(*b*) Die Jungfrau von Orleans, Act V, whole of Scene 1.

(*c*) Wilhelm Tell, Act II, Scene 2, Da weinte ich..... Herz und Mund.

(*d*) Wilhelm Tell, Act IV, Scene 1, So fahren wir..... in den See

2. Comment on the following:—(*a*) Der Stier von Uri, (*b*) Naue, (*c*) Firn, (*d*) Küsznacht, (*e*) Landammann, (*f*) Hochwachten, (*g*) Twing.

3. Geben Sie den Hauptinhalt von der Scene des Apfelschusses an.

4. Discuss the dramatic advantages or necessity of giving Joan of Arc an honourable death.

5. Welche Stämme haben einst mit den Germanen ein Einheitliches Volk gebildet?

6. Warum besitzen wir keine zusammenhängenden Sprachdenkmäler von den Langobarden und Burgundern?

7. Was für Ausdrücke in der französischen Sprache sind deutschen Ursprungs? Was sagt Behaghel von den französischen Wörtern auf *eur*?

8. Erläutern Sie den folgenden Satz: "Die verschiedenen Gebiete des Deutschen haben in sehr ungleicher Weise an der zweiten Lautverschiebung teilgenommen"?

9. Welche Gegend hat während der mittelhochdeutschen Periode einen Wechsel der Volkssprache erfahren?

10. "Gab es eine mittelhochdeutsche Schriftsprache"? Erläutern Sie diese Frage.

11. Warum wird ein reines Hochdeutsch häufiger in Norddeutschland angetroffen?

HEBREW.

FIRST YEAR.

MONDAY, 1ST APRIL:—9 TO 12 A.M.

Examiner,.....PROF. D. COUSSIRAT, B.A., B.D., D.D., OFFICIER d'ACADEMIE.

1. Translate literally:—

וַיֹּאמֶר אֱלֹהִים יְהִי רָקִיעַ בְּתוֹךְ הַמָּיִם וִיהִי מַבְדִּיל בֵּין מַיִם לָמָיִם: וַיַּעַשׂ אֱלֹהִים אֶת־הָרָקִיעַ וַיַּבְדֵּל בֵּין הַמַּיִם אֲשֶׁר מִתַּחַת לָרָקִיעַ וּבֵין הַמַּיִם אֲשֶׁר מֵעַל לָרָקִיעַ וַיְהִי־כֵן: וַיִּקְרָא אֱלֹהִים לָרָקִיעַ שָׁמָיִם וַיְהִי־עֶרֶב וַיְהִי־בֹקֶר יוֹם שֵׁנִי:

(*a*) Parse the verbs in section 1.
(*b*) Give the names and state the use of accents in the same.
(*c*) Explain the nature of the vowels of each word in section 2.

2. Translate literally:—

וְאֵד יַעֲלֶה מִן־הָאָרֶץ וְהִשְׁקָה אֶת־כָּל־פְּנֵי הָאֲדָמָה: וַיִּיצֶר יְהוָה אֱלֹהִים אֶת־הָאָדָם עָפָר מִן־הָאֲדָמָה וַיִּפַּח בְּאַפָּיו נִשְׁמַת חַיִּים וַיְהִי הָאָדָם לְנֶפֶשׁ חַיָּה: וַיִּטַּע יְהוָה אֱלֹהִים גַּן־בְּעֵדֶן מִקֶּדֶם וַיָּשֶׂם שָׁם אֶת־הָאָדָם אֲשֶׁר יָצָר: וַיַּצְמַח יְהוָה אֱלֹהִים מִן־הָאֲדָמָה כָּל־עֵץ נֶחְמָד לְמַרְאֶה וְטוֹב לְמַאֲכָל וְעֵץ הַחַיִּים בְּתוֹךְ הַגָּן וְעֵץ הַדַּעַת טוֹב וָרָע: (Genesis II, 6-9).

(*a*) Parse (1) וַיִּפַּח (2) נִשְׁמַת (3) וַיָּשֶׂם.
(*b*) Inflect the singular of נְפָשׁ.
(*c*) Give the primary meaning of בָּרָא, עָשָׂה and יָצַר.
(*d*) Explain the ֫ under ן in טוֹב וָרָע.

3. State the characteristics of various stems.
4. Inflect the (1) Hiphil perfect of כָּתַב and (2) Niphal Imperfect of פָּרַד.

5. What are the uses of Methegh, Mappîq, Raphé and Maqqêph?
6. Point and translate.

ומעץ הדעת טוב ורע לא תאכל ממנו כי ביום אכלך ממנו מות תמות:

7. Render into Hebrew: (1) God sanctified this day and this place. (2) This fruit was good for food. (2) Who formed every fowl of the heaven?
8. Reading.

INTERMEDIATE EXAMINATION.

MONDAY, 1ST APRIL :—9 TO 12 A.M.

Examiner,..... .....PROF. D. COUSSIRAT, B.A., B.D., D.D., [OFFICIER d'ACADEMIE.

1. Translate literally :—(Exodus XI, 4 to 6 inclusive.)

וַיֹּאמֶר מֹשֶׁה כֹּה אָמַר יְהוָה כַּחֲצֹת הַלַּיְלָה אֲנִי יוֹצֵא בְּתוֹךְ מִצְרָיִם: וּמֵת כָּל־בְּכוֹר בְּאֶרֶץ מִצְרַיִם מִבְּכֹר פַּרְעֹה הַיֹּשֵׁב עַל־כִּסְאוֹ עַד בְּכוֹר הַשִּׁפְחָה אֲשֶׁר אַחַר הָרֵחַיִם וְכֹל בְּכוֹר בְּהֵמָה: וְהָיְתָה צְעָקָה גְּדֹלָה בְּכָל־אֶרֶץ מִצְרַיִם אֲשֶׁר כָּמֹהוּ לֹא נִהְיְתָה וְכָמֹהוּ לֹא תֹסִף:

(*a*) Parse the verbs in verse 5.
(*b*) Point out the dual nouns in the same verse.
(*c*) Inflect the Kal perfect and the Hiphil imperfect of מות.
(*d*) Write explanatory notes on (1) מֹשֶׁה (2) פַּרְעֹה (3) מִצְרַיִם.
(*e*) What are the characteristics of "פ" ן verbs in Niphal and Hophal?

2. Translate literally :—(Deuteronomy V, 25 to 27 inclusive :)

וַיִּשְׁמַע יְהוָה אֶת־קוֹל דִּבְרֵיכֶם בְּדַבֶּרְכֶם אֵלָי וַיֹּאמֶר יְהוָה אֵלַי שָׁמַעְתִּי אֶת־קוֹל דִּבְרֵי הָעָם הַזֶּה אֲשֶׁר דִּבְּרוּ אֵלֶיךָ הֵיטִיבוּ כָל־אֲשֶׁר דִּבָּרוּ: מִי־יִתֵּן וְהָיָה לְבָבָם זֶה לָהֶם לְיִרְאָה אֹתִי וְלִשְׁמֹר אֶת־כָּל־מִצְוֹתַי כָּל־הַיָּמִים לְמַעַן יִיטַב לָהֶם וְלִבְנֵיהֶם לְעֹלָם: לֵךְ אֱמֹר לָהֶם שׁוּבוּ לָכֶם לְאָהֳלֵיכֶם:

(*a*) Inflect the plural of דָּבָר.

(*b*) Analyze (1) הֵיטִיבוּ (2) בְּדִבְרֵכֶם (3) לְיִרְאָה.

(*c*) What is the force of מִי־יִתֵּן?

(*d*) Inflect the singular of חֲזֵה.

(*e*) What are the characteristics of ל guttural verbs?

(*f*) Give the construct state singular and the plural absolute of (1) אָב. (2) אָח. (3) בֵּן.

3. Render into Hebrew: (1) The man knew good and evil. (2) Thou hast driven me out this day. (3) Cain was building the city Enoch.

4. Give an example of synonymous parallelism.

5. Point and translate: סכום פסוקי דספר ואלה שמות אלף ומאתים ותשעה. אר"ט סימן. ופרשיותיו י"א. הכל מאה וששים וארבע פרשיות.

6. Explain the use of the פָּרָשָׁה and הַפְּטָרָה.

7. Reading the unpointed text.

B.A. ORDINARY EXAMINATION.

MONDAY, 1ST APRIL:—9 TO 12 A.M.

Examiner,..... .....PROF. D. COUSSIRAT, B.A., B.D., D.D., [OFFICIER d'ACADEMIE.

1. Translate literally:—(Isaiah 53, 9 to 11 inclusive.)

מֵעֹצֶר וּמִמִּשְׁפָּט לֻקָּח וְאֶת־דּוֹרוֹ מִי יְשׂוֹחֵחַ כִּי נִגְזַר
מֵאֶרֶץ חַיִּים מִפֶּשַׁע עַמִּי נֶגַע לָמוֹ: וַיִּתֵּן אֶת־רְשָׁעִים
קִבְרוֹ וְאֶת־עָשִׁיר בְּמֹתָיו עַל לֹא־חָמָס עָשָׂה וְלֹא מִרְמָה
בְּפִיו: וַיהוָה חָפֵץ דַּכְּאוֹ הֶחֱלִי אִם־תָּשִׂים אָשָׁם נַפְשׁוֹ
יִרְאֶה זֶרַע יַאֲרִיךְ יָמִים וְחֵפֶץ יְהוָה בְּיָדוֹ יִצְלָח: מֵעֲמַל
נַפְשׁוֹ יִרְאֶה יִשְׂבָּע בְּדַעְתּוֹ יַצְדִּיק צַדִּיק עַבְדִּי לָרַבִּים וַעֲוֹנֹתָם
הוּא יִסְבֹּל:

(*a*) What are the possible subjects of תָּשִׂים?

(*b*) Point and translate the Masoretic note יא קמץ בז׳ק

(*c*) Inflect (1) עָוֹן and (2) מָוֶת

(*d*) Parse הֶחֱלִי. Explain the ־. How would that word be written as a noun?

2. Translate literally :— (Job 40, 15 to 19 inclusive.)

הִנֵּה־נָא בְהֵמוֹת אֲשֶׁר־עָשִׂיתִי עִמָּךְ חָצִיר כַּבָּקָר יֹאכֵל׃
הִנֵּה־נָא כֹחוֹ בְמָתְנָיו וְאוֹנוֹ בִּשְׁרִירֵי בִטְנוֹ׃ יַחְפֹּץ זְנָבוֹ
כְּמוֹ־אָרֶז גִּידֵי פַחְדּוֹ יְשֹׂרָגוּ׃ עַצְמָיו אֲפִיקֵי נְחוּשָׁה גִּרְמָיו
כְּמֵטִיל בַּרְזֶל׃ הוּא רֵאשִׁית דַּרְכֵי־אֵל הָעֹשׂוֹ יַגֵּשׁ חַרְבּוֹ׃

(*a*) Give the coptic for בְּהֵמוֹת.

(*b*) Parse the nouns in verse 16.

(*c*) Explain the Masoretic note יז פחדיו קרי

(*d*) Inflect the Pual imperfect of שָׂרַג.

3. Write explanatory notes on (1) לִוְיָתָן (2) מַזָּרוֹת (3) רֵים.

4. State the contents of the addition to the book of Job found in the Alexandrian Version.

5. Remark on the form and contents of psalm 34.

6. Render into Hebrew: (1) We have seen that the Lord is good (2) He will teach us the fear of the Lord. (3) They have departed from evil. (4) Lord, redeem the soul of thy servants!

7. How may the *protasis* of a conditional sentence be introduced?

8. Show the importance of the Moabite stone and the Siloam inscription.

9. Describe shortly the contents of Assyrian Literature so far deciphered.

HONOUR COURSE.

SEMITIC LANGUAGES AND LITERATURE.

ARAMAIC.

FRIDAY, APRIL 5TH :—9 TO 12 A.M.

Examiner,.....THE REV. PROF. D. COUSSIRAT, B.A., B.D., D.D., [OFFICIER D'ACADÉMIE.

1. Translate : Targum of Jonathan on Genesis VIII, 20 to 21 inclusive.

(*a*) Inflect the Aphel of תוב

(*b*) Compare the paraphrases of Onkelos and of Jonathan.

(*c*) Give our corresponding dates of the month of Marchesvan Teboth and Tammuz.

2. Translate Targum on Isaiah VI, 13.

(*a*) Parse the verbs.

(*b*) Give the Hebrew, Greek and Latin words for בְּלוּט.

3. Translate Daniel V, 30, and VI, 1 to 3 inclusive.

(*a*) State the rules of the numerals in Aramaic.

(*b*) Write explanatory notes on (1) נְבוּכַדְנֶצַּר (2) בִּלְשַׁאצַּר (3) דָּרְיָוֶשׁ.

(*c*) Inflect fully מַלְכוּ.

(*d*) How is the ל to be explained in לְהֶוֹן ?

(*e*) Give the date of Nebucadrezzar's dream in chapter 2, and its probable interpretation.

4. Translate Ezra VI, 14 to 16 inclusive.

(*a*) Plural of בַּר.

(*b*) Parse שֵׁשִׁיצִיא.

(*c*) Date of the return of Ezra to Jerusalem.

5. Compare the Targums and Biblical Aramaic as to (1) forms in ע ״ו verbs, (2) the use of the emphatic state.

———

B.A. HONOURS.

HEBREW.

TUESDAY, APRIL 9th :—9 TO 12 A.M.

Examiner,.....: .....PROF. D. COUSSIRÀT, B.A.,B.D., D.D., OFFICIER D'ACADEMIE.

1. Translate Malachi III 10-12 inclusive.

(*a*) Point out the unusual words and expressions found in that passage.

(*b*) How is נֵעֵר translated in chapter ii, verse 3?

(*c*) Give the reading of the Septuagint for יִשְׁחִית ?

(*d*) Point and translate the Masoretic notes of verses 10 and 11.

(*e*) To what does אֹכֵל refer?

(*f*) Who is the author of the book of Malachi, according to Calvin?

(*g*) Who is the Angel of the Covenant?

2. Translate Job XXXI, 33-36 inclusive.

(*a*) Parse (1) לְטַמְּנוֹן (2) יְחַתֵּנִי (3) תָּוִי (give its literal meaning) (4) אֶקְרְבֵנוּ (explain the vowels and the dagheshe).

(*b*) What is the meaning of כְּאָדָם in this passage?

(*c*) What is the equivalent of חֹב?

(*d*) Make a note on סֵפֶר.

(*e*) Is the book of Job a drama?

(3) Comment fully on psalm CXXXIX. (Contents, authorship, aramaisms, etc.).

B.A. HONOURS IN SEMITIC LANGUAGES AND LITERATURE.

HISTORY.

TUESDAY, 16TH APRIL :—9 TO 12 A.M.

Examiner,... .PROF. D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

Answer only ten questions.

Write on the following subjects :

1. The cradle of the Semites.
2. The influence of the Semitic race in history.
3. The hypothesis of a primitive Semitic Language.
4. The ancient fragments contained in the historical books of the Old Testament.
5. The language and the contents of the Mishna.
6. The characteristic features of the phœnician.
7. Syriac influence on the style of the New Testament.
8. The Samaritan version of the Pentateuch.
9. The Mandaitic Literature.
10. The Peshito Version.
11. The Ethiopic version of the Bible.
12. The ancient Arabic inscriptions.
13. The dialect of the Koraish.
14. The influence of the Exile on the Hebrew language.
15. A comparison between the Semitic and the Indo-European Grammars.
16. The decipherment of Assyrian.
17. The peculiarities of the rabbinic dialect.

B.A. HONOURS IN SEMITIC LANGUAGES AND LITERATURE.

WRIGHT'S COMPARATIVE GRAMMAR.

TUESDAY, 23RD APRIL:—9 TO 12 A.M.

Examiner,... .PROF. D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

Write fully on the following subjects:—

1. Founders of Semitic philology.

2. Oldest Monuments of Semitic Writing.

3. Table of permutation of the various classes of letters in the Semitic alphabet.

4. The original vowel-system.

5. Prosthetic vowels in the Semitic languages.

6. Expression of the reflexive by the aid of substantives in Arabic and Hebrew.

7. Cases in Assyrian and Arabic, and traces of case-endings in Hebrew.

8. The plural of the feminine nouns in the Semitic languages.

9. The preformative *ya*.

10. The moods of the Imperfect in Arabic and Hebrew.

SEMITIC LANGUAGES AND LITERATURE.

B.A. HONOURS.

APRIL 24TH:— 9 TO 12 A.M.

Examiner,...REV. PROF. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE

Translate into Hebrew:

Sovereign of all worlds! We presume not to present our supplications before thee, relying on our righteousness, but because of thy abundant mercies. What are we? What is our life? What is our goodness? What is our righteousness? What is our help? What is our power? What then shall we say in thy presence, O Lord, our God! and the God of our fathers?

But we are thy people, the children of thy covenant, the children of Abraham thy beloved, to whom thou didst swear on mount Moriah ; the seed of Isaac his only son, who was bound upon the altar; the congregation of Jacob thy first-born son, from the love wherewith thou didst love him, and the joy wherewith thou didst rejoice in him, thou hast called Israel and Jeshurun.

SIGHT TRANSLATION.

Translate at sight Jeremia XV, 1 to 6 inclusive.

THE NEIL STEWART PRIZE.

TRANSLATION.

FRIDAY, APRIL 12th 9 TO 12 A.M.

Examiner,.....PROF. COUSSIRAT, B.A , B.D., D.D., OFFICIER D'ACADEMIE.

1. Translate Exodus XV, 6-10 inclusive.

(*a*) Parse fully every word of verse 9, explaining the nature and the changes of the vowels, the name and use of the accents, and stating the principles of Syntax.

(*b*) Make notes on (1) פֶּסַח (2) the hardening of Pharaoh.

2. Translate Isaiah XI, 10-15 inclusive.

(*a*) Remark on עִיִּים.

(*b*) Write explanatory notes on Pathros, Cush, Elam, Shinar, Hamath, and the tongue of the Egyptian sea.

3. Point and translate the Masoretic note found at the end of the book of Isaiah.

4. Sketch briefly the contemporary history of Isaiah.

THE NEIL STEWART PRIZE.

GRAMMAR.

FRIDAY, APRIL 19TH, 1895:—9 TO 12 A.M.

Examiner, ...PROF. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADEMIE.

1. Write out a comparative table of the strong and weak verbs, in the perfect and imperfect, 3rd person singular, masculine. State the laws of the Hebrew language which explain in every case the modifications of the weak verbs.

2. Give an instance of the different classes of the segholates nouns. Inflect the words which you have selected. State the principles which explain the inflection of nouns in general.

3. What are the various methods of marking emphasis?

4. Render into Hebrew: (1) One law. (2) Seven sons and three daughters. (3) Forty nights. (4) Seventy-five years. (5) A hundred prophets. (6) In the fourth year. (7) Seven times. (8) One-half. (9) Nine-tenths,—and give the rules of the numerals applied in each case.

NATURAL SCIENCE.

FACULTY OF ARTS.

FIRST YEAR.

CHEMISTRY.

WEDNESDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiners..... ..... { B. J. HARRINGTON, B.A., PH.D. / NEVIL NORTON EVANS, M.A.SC.

NOTE.—*Answer any ten questions.*

1. Give equations illustrating the principal changes that take place in the manufacture of sulphuric acid. What are the properties of the acid?

2. Give briefly the preparation and properties of fluorine and of hydrofluoric acid.

3. Give the names and formulæ of the oxide and acids of boron, explaining the relationship of the acids to one another and to the oxide.

4. Explain the constitution of normal, acid, and basic salts, giving two examples of each.

5. What are the principal analogies between the compounds of phosphorus and arsenic? Give briefly the preparation of each of these elements.

6. In what ways are crystals formed? Explain their classification into systems.

7. Explain the statement that the properties of the elements are periodic functions of the atomic weights.

8. Illustrate by means of equations the chemical changes that take place in the Solvay process for the manufacture of sodium carbonate.

9. State what you know with regard to the composition of artificial fertilizers.

10. Describe carefully two methods for the production of steel.

11. From what sources is potassium carbonate obtained? How is metallic potassium prepared?

12. What volume of sulphur dioxide is obtained by the action of 20 grams of sulphuric acid on copper?

SESSIONAL EXAMINATIONS,

FACULTY OF ARTS.

BOTANY, I.

THURSDAY, APRIL 18TH :—MORNING, 9 TO 12.

Examiner,.....D. P. PENHALLOW, B.Sc.

1. Describe fully the structure and function of the prothallus. Show (*a*) in what plants it attains its highest development, and (*b*) its gradual disappearance.

2. Outline a classification of plants, and detail the general characteristics of each division made.

3. Outline the structure and development of the myxomycetes, and show their biological relations to other organisms.

4. Trace the course of development (internal) of an exogenous stem. Example.

5. Trace the course of development (internal) of an endogenous stem. Example.

6. Give a concise account of the function of photogenesis as to (*a*) conditions, (*b*) products, (*c*) relation to plant and animal life.

7. Give a concise account of the structure and distribution of stomata, and show their relation to functional activity. Explain the nature of the function or functions dependent upon stomata.

8. Give a full explanation of the distinguishing characteristics of a gymnosperm.

9. Apply the terms dimorphism, syngenesious, monadelphous, placenta, carpel, parthenogenesis to special examples, and explain their meaning.

10. Trace the movement of the nutrient fluid of a plant, show what changes are effected in its character, and give proof of the particular direction taken.

PRACTICAL EXAMINATION THURSDAY, APRIL 18TH, 2 O'CLOCK P.M.

SESSIONAL EXAMINATIONS.

FACULTY OF ARTS.

BOTANY, II.

THURSDAY, APRIL 18TH :—2 TO 5 P.M.

Examiner,..... .....D. P. PENHALLOW, B.Sc.

1. Describe the structures represented in Specimen No. 2, and refer the plant to its branch, order and genus.

2. Describe fully the specimen marked 1, and refer it to its branch and order.

3. Describe in full, Specimen No. 3.

4. Explain what law is represented by Specimen No. 4. Give a full exposition.

5. Classify the plants included in lot 5, referring them to their several genera, and show upon what grounds such distinction rests.

6. Describe fully the various structures represented in No. 6, and show their relation to the alternation of generations. Classify.

7. Describe the specimens in lot 7, from a — f, with respect to texture, color, surface, form, venation, apex, margin. Also show what is the morphological character of each.

8. Classify fully the specimens in lot No. 8.

N. B. Manuals will be required for questions 1 and 2.

SESSIONAL EXAMINATION.

ZOOLOGY.

THIRD YEAR ARTS AND SECOND YEAR APPLIED SCIENCE.

WEDNESDAY, APRIL 17TH:—2 TO 5 P.M.

Examiner,.....W. E. DEEKS, B.A., M.D.

1. (*a*) Classify *Porifera*, and give the distinctive characters of each subdivision with examples.

(*b*) Describe the minute anatomy and modes of reproduction of any individual form.

2. Describe the structure and life-history of *Trematoda*.

3. The *Diptera*, structure, name three of the families, and describe the life-history of a member of each.

4. Describe the structure of the *Polyzoa*, and state any peculiar modifications present in their morphology and reproduction.

5. The morphology of the *Holothuroidea*. Wherein do they resemble and differ from the *Echinoidea*?

6. Write on the *Amphibia*. (*a*) General characters. (*b*) Development. (*c*) Classification with examples.

7. Describe the digestive organs in Ruminants, Selachians, Granivorous birds, Monotremes and Ophidians.

8. To what do the following zoological terms refer:—Balanoglossus, Lemurs, Sea-grapes, Vorticella, Sea-fan, Apteryx, Nauplius, Sea-horse, Gregarines, Sea-mouse.

9. Write a short account of the following, giving their distinctive characters: *Crocodilia*, *Radiolaria*, *Scansores*, *Heteropoda*, *Hirudinea*, *Pinnipedia*, *Brachyura*, *Ganoidei*, *Scorpionida*, *Cirrhipedia*. Give examples of each.

10. Practical examination consisting of the identification and classification of 50 species.

SESSIONAL EXAMINATION.

ADDITIONAL ZOOLOGY.

FOURTH YEAR ARTS.

FRIDAY, MARCH 29TH:—2 TO 5 P.M.

Examiner, ... W. E. DEEKS, B.A., M.D.

1. Describe fully the principal morphological units entering into the structure of a highly organized animal, and show how they are united to form tissues.

2. (*a*) Give a detailed description of the circulatory system of a *mammal* micro and macroscopically.

(*b*) Compare it with the circulatory system of *Aves*.

3. The earthworm. What structures are found in the anterior twenty-five segments? Diagrammatically represent a transverse section posterior to this.

4. Describe the anatomy of the sea urchin.

5. Compare the shoulder girdle and anterior extremity in mammals and birds.

6. Describe the external characters of the lobster, and its nervous system.

7. Enumerate the cranial nerves of a vertebrate, stating their distribution and the openings where they leave the skull.

8. Describe the anatomy of *Helix pomatia*, and state its chief homologies in *Anodon*.

9. Describe the digestive system of the cockroach.

10. Describe the microscopical characters of *Paramœcium* and the conditions in which it flourishes.

B.A. ORDINARY EXAMINATION AND THIRD YEAR APPLIED SCIENCE.

WEDNESDAY, APRIL 10TH:—MORNING, 9 TO 12 AND 2 P.M.

Examiners, ... { B. J. HARRINGTON, B.A., PH.D. / FRANK D. ADAMS, M.AP.SC., PH.D.

1. Explain the chemical and mechanical processes at work when a mass of granite becomes transformed into a series of beds of sand and clay.

2. Describe a typical glacier, and show what work is accomplished by it.

3. Describe the general petrographical character of the Laurentian. How is the system subdivided? What evidences of life does it afford?

4. Describe the character and subdivisions of the Permian of Europe. What palæontological changes mark the close of the Palæozoic in the northern hemisphere?

5. Describe briefly the Post Pliocene deposits in the vicinity of Montreal. Enumerate a few of the principal fossils which they contain, and state the climatal conditions indicated.

6. Coal—its mode of occurrence, age of the strata in which it is found, method of accumulation. Name and describe briefly two of the fossil plants which occur in the coal of Nova Scotia.

7. Explain the following terms, and illustrate your explanations by means of diagrams: Synclinal, Unconformability, Normal Fault, False Bedding, Foot Wall, Country Rock.

8. Describe the Erian or Devonian Rocks of Canada, and give a brief outline of the palæontology of the Old Red Sandstone.

9. Either of the following:—

(*a*) State the zoological or botanical, and the geological relations of *Calamites, Psilophyton, Archæopteryx, Lingula, Belemnites, Hylonomus, Protospongia, Eozoon, Halysites, Megatherium, Pentremites, Graptolitidæ.*

(*b*) State the distribution of the Laurentian, Carboniferous, Cretaceous and Triassic rocks in Canada.

2 o'clock P.M.

10. Name the fossils exhibited, and state the geological formations to which they belong.

11. Name and describe the rock specimens.

THIRD YEAR HONOURS IN NATURAL SCIENCE, AND THIRD YEAR APPLIED SCIENCE. (*Chemistry and Mining Courses.*)

MINERALOGY.

FRIDAY, APRIL 19TH, :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. Distinguish, by means of sketches and symbols, between the different hemi-hexoctahedrons of the isometric system.

2. Explain the notation of crystal planes in the tetragonal and triclinic systems, according to Weiss, Naumann and Miller.

3. Calculate the quantivalent ratio and formula of a mineral which was found to have the following percentage composition: Silica 35.68, Alumina 5.88, Ferric Oxide 23.70, Ferrous Oxide 3.65, Manganous Oxide 0.81 Lime 29.64, Magnesia 0.64.

4. State what you know with regard to the optical characters (*a*) of orthorhombic, and (*b*) of monoclinic crystals.

5. Explain isomorphism, and give the more important groups of isomorphous minerals.

6. Explain the distinction between orthosilicates, metasilicates and parasilicates, giving examples of minerals belonging to each class.

7. What are the principal sources of error and what the precautions to be taken in determining the specific gravity of minerals?

8. Give the composition, crystalline form, hardness and specific gravity of Enstatite, Chrysolite, Beryl and Garnet.

9. Discuss the chemical constitution of Pyroxene and Amphibole, and briefly characterize the more important varieties of these two species.

10. Describe carefully the specimens and models exhibited. Give also spherical projections of any two of the models.

THIRD YEAR HONOURS IN NATURAL SCIENCE AND THIRD YEAR IN APPLIED SCIENCE (*Departments of Mining and Practical Chemistry*).

DETERMINATIVE MINERALOGY.

MONDAY, APRIL 22ND :—MORNING, 9 TO 11.

Examiners, ... { B. J. HARRINGTON, B.A., PH.D. / NEVIL NORTON EVANS, M.A. SC.

1. Describe the ordinary mouth blowpipe as employed in determinative mineralogy, and explain how by its use oxidizing and reducing flames are produced.

2. In the absence of coal-gas, what fuels are best adapted for blow-pipe work ?

3. What minerals constitute the scale of fusibility ? How is it used in determining the fusibility of a mineral ?

4. Explain 5 of the following terms :—Gelatinisation, intumescence, decrepitation, fluorescence, deflagration, exfoliation.

5. Magnetite, ilmenite, franklinite, chromite. By what tests may these minerals be distinguished from one another ?

6. State what takes place on heating each of the following minerals in the open tube :—Pyrite, arsenopyrite, stibnite, cinnabar.

7. Give the reactions used in determining the presence of 5 of the following elements :—phosphorus, titanium, manganese, chlorine, boron, zinc.

8. Give the blowpipe characters of 5 of the following minerals : almandine, hematite, calamine, nephelite, spinel, graphite.

B.A. HONOURS IN NATURAL SCIENCE AND B.A.SC.

(*Chemistry and Mining Courses.*)

(*First Paper*) MINERALOGY.

FRIDAY, DEC. 21ST :—MORNING, 9 TO 12.

Examiners, ... { B. J. HARRINGTON, B.A., Ph.D. / FRANK D. ADAMS, M.A.SC., Ph.D.

1. What do you understand by isomorphous mixtures ? Give examples.

2. State what you know with regard to the crystallographic and optical characters of orthorhombic minerals.

3. Calculate the quantivalent ratio of a mineral which was found to have the following percentage composition:—Silica 35.80, Alumina 5.80, Ferric Oxide 23.70, Ferrous Oxide 3.60, Manganous Oxide 0.90, Lime 29.50, Magnesia 0.30.

4. Describe twinning as occurring in the members of the Feldspar group.

5. Briefly describe each of the following species:—Wolframite, Göthite, Psilomelane, Tetrahedrite, Marcasite.

6. Give the general characters of the Scapolites, and describe one member of the group.

7. Give the chemical formula, crystalline form, hardness and specific gravity of Topaz, Zircon, Staurolite, Analcite, Pyromorphite.

8. Define the following terms:—Parameter, chief section, optic axial plane, acute bisectrix, extinction angle.

9. Explain the method of indicating the position of crystal faces by means of spherical projection, and give projections of any three of the crystals exhibited.

10. Give the blowpipe characters of Bornite, Menaccanite, Wollastonite Tourmaline, Thomsonite and Heulandite.

AFTERNOON, 2 TO 4.

Describe carefully any 20 of the 24 mineral specimens exhibited.

B.A. HONORS IN GEOLOGY AND NATURAL HISTORY.

(SECOND PAPER) ADVANCED GEOLOGY.

MONDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiners, ... { B. J. HARRINGTON, B.A., PH.D. / FRANK D. ADAMS, M.AP.SC., PH D.

1. Explain Darwin's theory concerning the evidence of subsidence afforded by Coral Reefs, and compare it with the views as to their origin put forward by Murray. Illustrate your answer by sketches.

2. Describe the geological structure of Shawa gunk Mountain, and show how we have in it an excellent example of the influence of geological structure on topography.

3. State and explain the criteria for the recognition of ancient Volcanic Rocks. Mention any district in Canada where such rocks occur and state their age.

4. Show how magmatic differentiation may give rise to ore bodies, and explain in detail the relations of one such deposit.

5. Explain how estimates of the relative duration of the several geological systems may be arrived at from a study of the strata composing them.

6. What evidence is there of secular changes in climate in Europe and North America? Explain Croll's theory to account for some of these.

7. What are soils, and how do they originate?

8. What do you understand by Homotaxis?

(THIRD PAPER) PETROGRAPHY.

THURSDAY, APRIL 4TH:—MORNING, 9 TO 1.

Examiners, ... { B. J. HARRINGTON, B.A., PH.D.
FRANK D. ADAMS, M.AP. SC., PH.D.

1. What do you understand by Optic and Elasticity Axes? How are they related in Augite, Hornblende and Apatite? Illustrate your answer by sketches.

2. Describe the following structures, and state the classes of rocks in which they respectively occur:—Perlitic, Clastic, Amygdaloidal, Ophitic, Microfelsitic, Spherulitic.

3. Wherein do the old Volcanic Rocks differ from the modern ones? What do you understand by an Aporhyolite? Describe in some detail the difference between it and a Rhyolite proper

4. Describe any case of Regional Metamorphism.

5. How can minerals differing in refractive index be distinguished under the microscope? Give examples.

6. Describe briefly the following:—Diorite, Basanite, Trachyte, Arkose, Melaphyre, Aplite.

7. Enumerate a few of the minerals which are especially characteristic of Metamorphic rocks.

8. Obsidian, its structure and composition. How is it related to Pumice, Liparite and Tachylite?

9. Draw out a scheme showing the mineralogical composition, names and mutual relations of the various differentiation products which have been observed in masses of Olivine Gabbro.

10. Name the ten hand specimens. What structures are exhibited by Nos. 8, 9 and 10?

11. Examine the six thin sections under the microscope. State in each case what minerals are present as well as the name and structure of the rock.

(FOURTH PAPER) PALÆONTOLOGY.

TUESDAY, APRIL 9TH:—MORNING, 9 TO 1.

Examiners,..... B. J. HARRINGTON, B.A., PH.D.
FRANK D. ADAMS, M.AP.SC., PH.D.

1. State what you know concerning Sigillaria, Cordaites and Calamites.

2. Enumerate and describe briefly the principal orders of fossil plants and animals occurring in the Post-pliocene deposits of Eastern Canada, and state what conclusions may be drawn from them concerning the climate of Canada during that time.

3. Describe the parts of a typical Graptolite. How is this group classified? Describe six of the principal genera, stating in each case its geological range.

4. Describe the parts of a typical Rugose coral. Describe any four genera, stating in each case the range.

5. Lithistidæ. Describe their anatomical character, and characterize any two typical genera, stating in each case the age.

6. State the zoological relations and geological age of the following: *Alveolites, Favosites, Rhynconella, Tetradium, Stromatopora, Glyptocrinus, Discina, Encrinus, Oldhamia, Terebratula.*

7. Describe any two genera of Foraminifera, which have built up great limestone formations. State the age of the limestones in each case.

8. Describe any three genera of articulate Brachiopods, giving in each case its geological range.

9. Refer the specimens exhibited to their geological formations and to their places in the zoological classification.

(FIFTH PAPER) PRACTICAL GEOLOGY.

FRIDAY, APRIL 19TH :—MORNING, 9 TO 1.

Examiners,..... { B. J. HARRINGTON, B.A , PH.D.
FRANK D. ADAMS, M.AP.SC., PH.D.

1. What precautions must be taken in order to determine accurately the dip of any series of strata.

2. Describe the chief varieties of faults, and illustrate by diagrams the influence they may have upon the outcrop of coal seams in an area of otherwise undisturbed strata.

3. What are the various colours and signs used in the geological maps issued by the Geological Survey of Canada?

4. Describe the method of constructing Horizontal Sections.

5. What are "Slickensides," and what do they indicate?

6. Explain the mode of occurrence and origin of the tin ore of Saxony or Cornwall.

7. What do you understand by the theories of Lateral Secretion and Ascension as applied to mineral veins? State briefly the chief arguments for and against the two views respectively.

8. Describe the effects of the action of the weather on surface portions of mineral veins of various kinds.

9. State what you know of the iron ores of the Clinton, and cite any Canadian example.

10. Describe "Section VI" on the accompanying sheet, and state what it teaches concerning the geological history of the sub-Himalayan zone.

(SIXTH PAPER) CANADIAN GEOLOGY.

MONDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner,..... { B. J. HARRINGTON, B A , PH.D.
FRANK D. ADAMS, M.AP.SC., PH.D.

1. Describe the geology of the Palæozoic in the vicinity of Montreal, naming characteristic fossils and describing the results of igneous action.

2. State what you know concerning the character and mode of occurrence of coal in the Cretaceous and Laramie of Western Canada.

3. State the age and general characters of the following:—

Salina formation.
Niagara formation.
Oriskany formation.
Utica shales.
Corniferous limestone.

Give the characteristic fossils of the last two.

4. Describe the physical geography and geology of the region between Lake Winnipeg and the Rocky Mountains.

5. State what you know of the Triassic of the eastern portion of the Dominion.

6. Describe the Palæozoic as developed in the Rocky Mountains along the line of the Canadian Pacific Railway.

7. Where is gold found in the Dominion? Explain its mode of occurrence and state the age of the rocks in which it is found in the several districts.

8. Draw a line of section from the Laurentian axis across Ontario to the west end of Lake Erie.

9 State what you know concerning the deposits of chromic iron ore and Apatite in the Dominion.

(*Omitted on page* 163.)

B. A. HONOUR MATHEMATICS.

THEORY OF POTENTIAL, ETC.

MONDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiner, ... JOHN COX, M.A.

1. Prove that for forces attracting according to the law of nature the potential v satisfies the equation

$$\frac{d^2 v}{dx^2} + \frac{d^2 v}{dy^2} + \frac{d^2 v}{dz^2} = 0$$

at all points where there is no attracting matter. What does the equation become at a point where the density is ρ. ?

2. Find the attraction of a segment of a paraboloid of revolution, bounded by a plane perpendicular to its axis, on a particle at its vertex.

3. Shew that the potential of a thin circular plate at a point on its axis where it subtends an angle $2\ a$ is $2\ \pi\ \rho\ l\ (1-\cos a)$, where l is the distance from its edge to the point.

4. Explain Faraday's conception of lines of force and equi-potential surfaces; and shew how to draw the lines from a magnet pole of strength m so that they may give a numerical measure of the force at any point in space.

5. Define electrostatic capacity. Prove that the capacity of a submarine cable is

$$c = \frac{l}{2\ log \frac{a''}{a}}$$

where l is its length and a and a'' the radii of the inner and outer surfaces of the insulating sheath.

6. Assuming that the field produced by a closed current is the same as that of the equivalent magnetic shell, shew that its potential on a magnet pole of given strength is proportional to the strength of the current and the number of lines of force from the pole included in the contour of the current.

7. Q units of electricity are placed on a body of capacity c, which is then discharged through a resistance R. Find an equation for the flow of current, and calculate the time of discharge.

8. If P and Q are two forces whose directions are at right angles, shew that the distances of the central axis from their lines of action are as $P^2 : Q^2$.

OPTICS AND RIGID DYNAMICS.

TUESDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiner..... .... JOHN COX, M.A.

1. Four convex lenses, whose focal lengths are a, b, b, a respectively, are placed at intervals $a + b$, $2b\frac{a+b}{a-b}$, $a + b$ on the same axis; shew that a pencil of light after refraction at all four lenses diverges from the point from which it originally emanates.

2. A pencil is incident directly on a spherical refracting surface (radius r) from a distance u. If the aperture of the surface be y, shew that the aberration is numerically

$$\frac{\mu - 1}{\mu} \frac{\left(\frac{1}{r} - \frac{1}{u}\right)^2}{\left(\frac{\mu - 1}{r} + \frac{1}{u}\right)^2} \left(\frac{1}{r} - \frac{\mu + 1}{u}\right) \frac{y^2}{2}$$

What is the nature and use of the Least Circle of Aberration?

3. Prove that for minimum deviation a ray must pass symmetrically through a prism. Find a formula for the deviation in this case.

4. Explain the formation of primary and secondary focal lines in oblique pencils, and find the primary focus of a pencil obliquely incident on a spherical refracting surface.

5. If two lenses of focal lengths f_1, f_2 be placed on the same axis at a distance a, shew that the equivalent focus is f where

$$\frac{1}{f} = \frac{1}{f_1} + \frac{1}{f_2} + \frac{a}{f_1 f_2}$$

6. Give a general explanation of the rainbow.

7. Shew that the illumination produced at any point of a surface by a given source of light varies as the cosine of the angle of incidence and inversely as the square of the distance.

Find the position of a bright point which equally illuminates the three sides of a given triangle.

8. Explain d'Alembert's Principle, and shew how to deduce from it the general equations of motion of a rigid body.

9. Define the Moment of Inertia of a body about a given axis.

Find the Moments of Inertia (1) of a rectangle (sides $2a, 2b$), (2) an ellipse (axes $2a, 2b$) about an axis through their centres and perpendicular to their plane.

10. Investigate the motion of a solid body under gravity, capable of swinging about a horizontal axis; and find the time of a small oscillation.

Define the Centre of Oscillation, and explain the principle upon which Kater's Pendulum depends.

THEORY OF LIGHT.

MONDAY, APRIL 1ST :—MORNING, 9 TO 12.

Examiner, ... JOHN COX, M.A.

1. Interpret the equation $y = a \sin \frac{2\pi}{\lambda} (vt - x)$ defining the quantities involved.

2. A particle of mass m vibrates according to the equation $y = a \sin (wt - \alpha)$. Find the mean kinetic energy of the vibration.

3. Shew that the resultant of two simple harmonic vibrations of the same period in perpendicular directions is in general an elliptic vibration. In what cases will it be rectilinear? Find the angle between the directions of the two latter vibrations.

4. State the principle of Huyghens, and apply it to account for the rectilinear propagation of light.

5. A ray is refracted from vacuum into any medium. Discuss the relations between the velocities of propagation, wave-lengths, and periodic times before and after refraction, and their connection with colour.

6. What arrangements would you make to obtain a pure spectrum?

7. Describe the optical bench, and the method of using it with a biprism to determine the wave-length of a given light.

8. Give a general explanation of Newton's rings, accounting for the black centre.

9. What is a zone-plate? Explain its action.

10. *Either* (*a*) With a concave diffraction grating (radius R) light from a source distant r incident at an angle i is diffracted at an angle θ. Shew that the focal distance will be ρ, where

$$\rho = \frac{R\, r \cos^2 \theta}{r(\cos\theta + \cos i) - R \cos^2 i}$$

and apply this to the arrangement of a Rowland grating.

or (*b*) Apply the method of Cornu's spirals to show that if light be incident *perpendicularly* on a single narrow rectilinear aperture, the intensity at any point of the diffraction pattern is proportional to

$$a^2 \frac{\sin^2 \left(\frac{\pi a}{\lambda} \sin\theta \right)}{\left\{ \frac{\pi a}{\lambda} \sin\theta \right\}^2}$$

Where a is the length of the aperture and θ the angle of diffraction.

FACULTY OF APPLIED SCIENCE.

SESSIONAL EXAMINATIONS, 1895.

FACULTY OF APPLIED SCIENCE.

FIRST YEAR.

MATHEMATICS, I.

MONDAY, DECEMBER 17TH:—AFTERNOON, 2 TO 5.30.

Examiner, ... R. S. LEA, MA.E.

1. Describe a rectangle equal in area to a given quadrilateral.

2. The sum of the squares on the sides of a triangle equals twice the square on half the base, together with twice the square on the line which joins the vertex to the middle of the base.

3. Divide a straight line internally into two segments, so that the rectangle contained by them may be equal to a given area.
When is this impossible?

4. Given the base of a triangle and the difference of the squares on its sides, find the locus of the vertex.

5. Prove that an angle at the centre of a circle is double of the angle at the circumference which stands upon the same arc.
Hence show that the angle in a semicircle is a right angle.

6. Find the locus of the middle points of chords of a circle drawn through a given point within it.

7. Find a mean proportional between two given straight lines.

8. If two straight lines are cut by three parallel planes they will be cut proportionally.

9. Write down the formula for the volume of the frustum of a triangular pyramid, in terms of its altitude and the areas of its bases.
If the altitude of a triangular pyramid is 10 feet, and the area of its base 25 square feet, what will be the volume of the portion of it lying between the base and a plane parallel to the base and 6 feet above it?

10. In a parabola prove that:

(*a*) The subtangent equals twice the corresponding abscissa.

(*b*) The subnormal is constant and equals one-half the latus rectum.

11. Show how to draw tangents to a parabola from a point without it; and prove that these tangents subtend equal angles at the focus.

12. Prove that the ratio of the focal distance of any point on an ellipse, to the perpendicular from this point on the directrix, is constant.

13. Show by the method of transversals that the bisectors of the angles of a triangle all pass through one point.

14. The right angle of a triangular set square is moved along a given straight line, while one of the edges containing the right angle passes through a fixed point; prove that the other edge always touches a certain parabola.

FIRST YEAR.

MATHEMATICS (II).

SATURDAY, APRIL 6TH:—MORNING, 9 TO 12.30.

Examiner,.....R. S. LEA, MA.E.

1. (1) $\dfrac{2\sqrt{15}+8}{5+\sqrt{15}} \div \dfrac{8\sqrt{3}-6\sqrt{5}}{5\sqrt{3}-3\sqrt{5}} = 4+\sqrt{15}$

(2) $\dfrac{n}{1-x^n} + \dfrac{n}{1-x^{-n}} = n$

(3) $a(b^2-c^2)+b(c^2-a^2)+c(a^2-b^2) = (a-b)(b-c)(c-a)$

2. Factor: (1) a^3+27b^3 (2 factors)

(2) $4(x-y)^3-(x-y)$ (3 ")

(3) $a-27b^3+c^3+9abc$ (2 ")

(4) $x^3-39x+70$ (3 ")

3. Solve the equations:

(1) $\left.\begin{matrix} x+y=1 \\ x^3+y^3=61 \end{matrix}\right\}$,

(2) $\dfrac{x+4}{x-1} - \dfrac{x-3}{x+3} = \dfrac{7}{2}$,

(3) $\dfrac{5x-8}{x-2} + \dfrac{6x-44}{x-7} - \dfrac{10x-8}{x-1} = \dfrac{x-8}{x-6}$,

(4) $\sqrt{4x+5} = \sqrt{x} + \sqrt{x+3}$.

4. If $\dfrac{a}{b} = \dfrac{c}{d} = \dfrac{e}{f}$ show that $\dfrac{a^3+c^3+e^3}{b^3+d^3+f^3} = \dfrac{ace}{bdf}$.

5. Prove the formula for finding the sum of any number of terms of an arithmetical progression. Show how to insert 29 arithmetical means between 5 and 69, and find their sum.

6. Assuming the formula for the number of permutations of n things r at a time, find the number of combinations.

If ${}^{n}C_3 \div {}^{n-1}C_4 = \frac{8}{5}$, find n.

7. How many arrangements can be made of the letters of the word *character* in a row? How many in a ring?

8. Enunciate the Binomial Theorem, and find by means of it the value of 99^4, and also of $\sqrt[4]{99}$ to three places of decimals.

FIRST YEAR.

MATHEMATICS, III.

SATURDAY, APRIL 13TH:—MORNING, 9 TO 1.

Examiner, ... R. S. LEA, MA.E.

1. A is a second-quadrant positive angle. Express the functions of its complement in terms of the functions of the angle itself.

2. Show that

(1) $$\frac{\sin A + \sin B}{\cos A + \cos B} = \tan \frac{A + B}{2}$$

(2) $$\cot \theta + \tan \phi = \frac{\cos (\phi - \theta)}{\cos \phi \sin \theta}$$

(3) $$\cos 2\theta = \frac{1 - \tan^2 \theta}{1 + \tan^2 \theta}$$

(4) $$\tan \frac{\theta}{2} + \frac{1}{2} \tan \theta \cdot \sec^2 \frac{\theta}{2} = \tan \theta.$$

3. Find the value of θ (less than 180°) from the equations:

(1) $$\cos 3\theta - \cos 5\theta = \sin \theta$$

(2) $$\tan^2 \theta + 4 \sin^2 \theta = 3.$$

4. If any plane triangle, show that:

(1) $$\text{Area} = \sqrt{s\,(s-a)\,(s-b)\,(s-c)}$$

(2) $$\text{Radius of circumscribing circle} = \frac{abc}{4 \times \text{area}}$$

(3) $$\sin A + \sin B - \sin C = 4 \sin \frac{A}{2} \sin \frac{B}{2} \cos \frac{C}{2}$$

5. Explain what is meant by (1) the sides and angles of a spherical triangle, (2) polar triangle (3) quadrantal triangle, (4) spherical excess, (5) spherical lune, (6) Napier's Rules.

6. In any right-angled spherical triangle,

(1) $$\tan A = \frac{\tan a}{\sin b}$$

(2) $$\cos c = \cos a \cos b$$

(3) Either side and the opposite angle are of the same species.

7. Write down Napier's Analogies, and prove any one of them.

8. In the plane triangle in which

$$a = 537.21,\ B = 117^\circ\ 23'\ 12'',\ C = 52^\circ\ 18'\ 10''$$

show that $A = 10^\circ\ 18'\ 38''$, $b = 2665$, $c = 2375$.

9. In the spherical triangles in which

(1) $a = 69^\circ\ 50'$, $b = 46^\circ\ 42'$, $A = 32^\circ\ 54'$

(2) $A = 107^\circ\ 33'$, $B = 128^\circ\ 42'$, $c = 124^\circ\ 13'$

Show that

(1) $c = 109^\circ\ 39'$, $B = 24^\circ\ 55'$, $C = 146^\circ\ 58'$

(2) $a = 82^\circ\ 47'$, $b = 125^\circ\ 42$, C [illegible] $27^\circ\ 22'$.

FIRST YEAR.

MATHEMATICS, IV.

FRIDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner.....G. H. CHANDLER, M.A.

1. A body moves on a rough horizontal plane. In going 9 feet its speed is reduced from 10 to 8 feet per second.

(1) Find the friction in poundals, assuming it constant.
(2) Show that the coefficient of friction is $\frac{1}{10}$ approximately.
(3) How far will the body move before coming to rest?
(4) Find the whole time of motion.

2. A point has the following velocities: 23 N., 30 E., 16 S., 6 W. Find by calculation the resultant speed, and the angle which it makes with the north, assuming $\sin^{-1}(\frac{7}{25}) = 16^\circ$.

3. From a circle of 12 in. radius is cut a circle of 12 in. diameter, a radius of the former coinciding with a diameter of the latter. Find the centre of gravity of the part which remains.

4. What advantage has the *simple reflecting circle* over the *sextant* as regards the accuracy of measurement? Show by a sketch the construction of the *repeating reflecting circle*. Explain its use and any special advantage it possesses.

5. Discuss the "frame work" of large triangulation surveys in relation to the territory to be covered. Show how the expansion from the base line is effected. Describe generally the reconnaissance for such a survey, having special reference to the intervisibility of stations and the means to be adopted to secure this, in special cases.

6. Give the methods you would employ in the computation of the triangles of a large survey.

7. Obtain a formula for the length of the offset to a parallel of latitude from a great circle running at right angles to a meridian in the given parallel.

8. Obtain an expression for the correction to azimuth due to an error of collimation.

9. Describe the methods of precise levelling, referring especially to the means to be adopted to avoid cumulative errors. (*a*) What rule would you adopt as to the limits of permissible discordances between different lines.

B.A.Sc. EXAMINATION.

GEODESY AND PRACTICAL ASTRONOMY—(*Second Paper.*)

SATURDAY, APRIL 6TH:—2 TO 5 P.M.

1. Calculate the clock error from the following star transits.

	Lamp West.		Lamp East.	
δ	31° 14′	56° 57′	62° 19′	21° 06′
A	+ 0·29	— 0·37	— 0·62	+ 0·44
B	+ 1·13	+ 1·80	+ 2·06	+ 0·97
C	+ 1·17	+ 1·84	+ 2·16	+ 1·07
T	10 43 05·69	10 58 39·38	11 00 25·64	11 11 34·63
a	10 40 04·23	10 55 34·47	10 57 19·69	11 08 33·88

b = + 0·52 Sec.

2. The sidereal clock was 3^m $22^s.11$ fast at 8^h April 4th, 1895, and in its rate .034 gaining per hour, find the error of the mean time clock from the comparison on the accompanying chronograph trace.

3. *a Leonis* was observed in Montreal on April 4th last to have an altitude of 45° 10′ 00″ (eastward of the Meridian). Find the mean time of the observation assuming the latitude to be 45° 30′.

4. Determine the magnifying power of the telescope by two methods.

SECOND YEAR.

KINEMATICS.

TUESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiner,.....J. T. NICOLSON, B.Sc.

(*Not more than twelve, of which three must be from the last seven.*)

1. In simple harmonic motion, define amplitude, period, phase. Give a graphic construction for the speed.

2. In a direct acting engine, find an expression for the distance of the piston from the end of its stroke, for any angle of the crank.

3. Sketch and describe the recoil and dead beat escapements.

4. Sketch and describe a quick return motion for a slotting or planing machine.

5. Give a graphic method of finding the piston speed in an oscillating engine.

6. Sketch carefully Morgan's feathering paddle-wheel.

7. Prove the property of Peaucellier's bars.

8. Sketch either a ratchet brace, or the nipping lever silent feed.

9. Prove that the common normal to two wheel teeth at the point of contact must always pass through the pitch point.

10. Discuss the effect of the size of the describing circles on the form of the faces and flanks of the teeth of a rack and pinion.

11. Deduce the general formula for an epicyclic train: and apply it to Watt's sun and planet wheels.

12. Sketch and describe the action of the winding on mechanism for the bobbin of a spinning machine.

13. Sketch the feed motion of a boring bar.

14. Define element, pair of elements, link, kinematic chain, mechanism, machine, instrument.

15. Exemplify pairs of elements with one, two, or three-fold mutual movability.

16. Distinguish between higher and lower pairing.

17. Show how to obtain *either* the actual *or* the reduced centrodes of the coupler and the fixed link in the quadric cylindric crank chain.

18. Give two instances of the complete kinematic closure of flectional elements.

19. Sketch and describe the mechanisms obtainable by inversion of the slider-crank chain.

20. Sketch and describe the mechanisms obtainable by inversion of the double slider-crank chain.

SECOND YEAR.

DRAWING.

SATURDAY, APRIL 16TH :—MORNING, 9 to 1.

Examiners ..... { J. T. NICOLSON, B.Sc. / G. SINCLAIR SMITH, B.A.Sc.

1. Draw the end view and two sections of the steam engine cylinder shown. Scale 3 inches to the foot.

2. An India rubber disc valve consisting of a circular disc of rubber between a guard plate and a gridiron seating. Complete the drawing of the plan. Scale 3 inches to the foot.

THIRD YEAR.

DRAWING.

SATURDAY, APRIL 16TH :—MORNING, 9 to 1.

Examiners..... { J. T. NICOLSON, B. Sc. / G. SINCLAIR SMITH, B.A.Sc.

1. Draw the four views shown of connecting rod to a scale to half-full size.

2. Indicate the purpose of the various details and the materials of which each part is made.

THIRD YEAR.

DYNAMICS OF MACHINERY.

WEDNESDAY, APRIL 10TH :—MORNING, 9 TO 12.

Examiner,.....J. T. NICOLSON.

(*Not more than ten, of which one must be No.* 11 *or* 12.)

1. Deduce from first principles the Zeuner valve diagram.

2. Apply the Zeuner valve and Müller piston diagrams to find the laps and the angular advance of a slide valve which has a travel of 4″, cuts off at half stroke, and releases at the end of the stroke; which is 15″ The connecting rod is 3′—3″ long.

3. How can the backward push of the connecting rod on the out stroke of a locomotive drag the train forward?

4. An engine weighing 50 tons works at 500 IHP in hauling four cars each weighing 25 tons up a 4 per cent. grade at 8 miles an hour. Assuming the mechanical efficiency of the engine to be 0.85, find the train resistance in lbs. per ton.

5. What horse-power will a four inch belt (safe load 120 lbs per inch) transmit to a pulley 30″ dia. running at 200 revs? Arc of embrace 180°, $\mu = 0.4$.

6. The breaking strength of a 1″ dia. hemp rope is 8,000 lbs. How many times must it be passed round an oaken post ($\mu = 0.5$) so that a force of 5 lbs. at the slack end will hold it while it is about to break at the tight side?

7. Investigate the equilibrium of a pulley in the state bordering on motion by the preponderance of a force P_1 which makes an angle θ with the force it is overcoming P Take the friction of the axle into account.

8. Sketch and describe the Alden absorption brake.

9. Investigate the efficiency of a square threaded screw and nut; neglecting friction of flat surface of nut and of guides.

10. Find an expression for the force required to hold a cotter in place, which has such a steep taper that it is just about to slack back, in terms of Q the load upon it, θ its angle, and μ the coefficient of friction.

11. Given the law of tangential and normal force under which a particle moves in a plane curve, the initial position and velocity; show how to draw the hodograph, the locus of the centre of curvature of the path, and the path itself.

12. Given the path of the centre of inertia of a rigid body of known moment of inertia, and the law of variation of the couple acting upon it. Show how to find graphically the curve of polar distances.

13. State the conclusions obtained by Galton from experiments on railway brakes.

14. Compare the works lost in friction in an old and new bearing.

15. Sketch a good design of friction wheels, giving reasons for each feature.

FOURTH YEAR.

DYNAMICS OF MACHINERY.

MONDAY, APRIL 8TH:—MORNING, 9 TO 1.

Examiner,..... J. T. NICOLSON, B.Sc.

1. In a Willans engine with pistons of equal weight, find expressions for the unbalanced alternating force and couple on the frame for any given angle of the crank.

Find the positions for which these are respectively greatest.

2. An outside cylinder locomotive; cylinders 5′—6″ centres, stroke 2 ft., weight of reciprocating parts (for one side) 500 lbs., running 50 miles per hour, driving wheels 7 feet dia., dia. of weight circle 5′—6″. You are required to find the magnitude and position of a single balance-weight on each side.

3. In a dynamo with an overhung pulley of radius R, of H P horse-power, at N revolutions, overhang of pulley x; find the equivalent twisting moment on the shaft at the bearing. Assume $T_2 = 2\ T_1$.

4. Show that, if a pulley which is out of balance be corrected when at rest by adding a weight w lbs. at a distance y ft. from the centre, the pulley will be in balance at all speeds.

Determine the alteration in the equivalent twisting moment of the dynamo of last question if the pulley be 12 lbs. ins. out of balance.

5. Describe concisely three ways of effecting compensation for early cut off in a steam pumping engine.

6. Make a skeleton diagram of the linkwork of an Atkinson Cycle Gas Engine, and show how to obtain the crank effort curve. Assume an indicator card and neglect inertia of all moving parts but the piston.

7. How would you find experimentally the radius of gyration of an engine connecting rod? Prove that your method is right.

8. Prove that to rotate the angular momentum $I\Omega\omega$ with angular velocity ω; a couple $I\Omega\omega$ is required.

The Woolf tandem engine of a screw steamer with a left-handed propellor has a fly-wheel weighing 12 tons which may be assumed concentrated at a radius of 5 feet. When making 120 revs. per min. and the helm hard over, the vessel makes a complete turn to starboard in one minute. How far and in what direction must a one ton weight be moved from the vessel's centre of mass in order to restore the trim?

9. In a centrifugal separator without a lip, originally half full, deduce the speed at which the fluid will just rise to the top.

If the drum of such a machine be 3 feet diameter and have a thickness of three inches of fluid on it when running 1,000 revs., find the pressure per square foot on the inside of the drum, the fluid having $1\frac{1}{2}$ times the density of water.

10. How would you decide as to which of two lubricants was the more economical?

11. In an engine governor, explain: controlling force, stability, sensibility, isochronism, power of governor, hunting and its cause.

12. Sketch and explain: (*a*) Knowles' supplementary governor; (*b*) Davey's differential valve gear for pumping engines.

13. Evaluate the resultant force required for the acceleration of a connecting rod for any given angle of the crank, in a direct acting engine.

THIRD YEAR.

MACHINE DESIGN.

SATURDAY, APRIL 13TH:—MORNING, 9 TO 1.

Examiners, ... { J. T. NICOLSON, B. Sc. / G. SINCLAIR SMITH, B.A.Sc.

1. Sketch and describe the four possible modes of fracture of a single riveted lap joint. Obtain expressions for the strength in each case.

2. Power is transmitted by belting from a line shaft to a two foot pulley on a countershaft. Assuming that the bending moment due to the pull of the belt may be neglected, design the countershaft, if $T_1 = \frac{1}{2} T_2 = 150$ lbs. Take fs=9000 lbs.

3. In the last question if the receiving pulley is placed between two bearings 10 feet apart and 3 feet from one of them, find diameter of shaft.

4. If an indicator spring be compressed $\frac{1}{4}''$ with a load of 10 lbs., find the work done in compressing and the amount of compression if the load is 15 lbs.

5. A boiler 20 feet long and 6 feet diameter is suspended from the ends, if the shell is $\frac{1}{2}$ inch thick find the maximum stress to which the metal is subjected, due to the weight of water contained in the boiler, when it is half full.

6. Design the square cottered end of a foundation bolt whose diameter is $1\frac{1}{2}$ inches. $f_s = 8{,}000$; $f_t = 10{,}000$; $f_c = 20{,}000$.

7. Determine the size of bolts necessary in an ordinary flange coupling for a 3 inch W. I. shaft if there are five of them and the diameter of the bolt circle is 11 inches. $f_s = 9000$.

8. Determine the thickness of plates necessary for the sides and spherical ends of a boiler 5 feet dia., carrying 100 lbs. steam pressure, taking the efficiency of the treble riveted double butt strap joint as 82% $f_t = 10{,}000$.

9. Calculate the diameter of a mild steel piston rod necessary for an engine with a cylinder 9 inches diameter, steam pressure 100 lbs., and ratio of length of rod to diameter being 7. Take $f = 3000$ and $a = \frac{1}{3000}$.

10. Discuss the possible modes of fracture in a double riveted, double butt strap joint.

11. Describe Beauchamp Tower's experiments on journal friction, and state the conclusions that may be drawn from them.

12. It is known that, in railway carriage axles, one thermal unit can be dissipated per minute per square inch of projected journal surface when running at 20 miles per hour. If the load on each journal is 10,000 lbs., what must be its length? The co-efficient of friction is 0.01, and the wheels are 3 feet diameter.

FOURTH YEAR.

MACHINE DESIGN.

FRIDAY, APRIL 5TH :—MORNING, 9 TO 1

Examiner,.....J. T. NICOLSON, B.Sc.

1. It is known that, in railway carriage axles, one thermal unit can be dissipated per minute per square inch of projected journal surface when running at 20 miles per hour. If the load on each journal is 10,000 lbs., what must be its length? The coefficient of friction is 0.01, and the wheels are 3 ft. dia.

2. Find the diameter and length of a crosshead neck journal for an engine with a $10\frac{1}{2}$'' cylinder, 100 lbs. working pressure. Take $f = 9000$, and assume the proper value for the allowable bearing pressure.

3. Calculate the principal proportions of a flange coupling for a wrought iron shaft 4" dia. The number of bolts to be six.

4. Sketch carefully Sellers's double cone vise coupling.

5. Deduce an expression for the relation between the force pressing a pair of wedge friction wheels together and the tangential force transmitted.

6. Investigate the strength of a cast iron wheel tooth on the assumption that the whole load comes on one corner.

7. A dynamo shaft runs at 1420 revs ; what is the largest diameter of cast iron pulley that could be safely employed to drive it? Prove your result.

8. Design a belt for the dynamo of last question to transmit $12\frac{1}{2}$ HP from a motor running at same speed. Take the effect of centrifugal force into account.

9. State concisely what you know about the transmission of power by wire ropes, referring to: (*a*) efficiency ; (*b*) pulleys ; (*c*) speed of ropes.

10. A fly-wheel 26 feet in diameter, weighing 40 tons keyed to a W. I. shaft resting in bearings 10 feet centre to centre, gives off 1000 HP at 50 revs. by a horizontal belt. Find the shaft diameter at centre and ends, taking both twisting and bending into account. Assume the tight- to be twice the slack-side tension.

11. Investigate the proportions of the links and pins of a flat link gearing chain, of four links abreast. The tight side tension is to be 5520 lbs. Take the breadth of the link $2\frac{1}{2}$ times the diameter of the pin. $f = 10{,}000$ for both link and pin.

12. Deduce expressions for the depth (*b*) of a W. I. overhung crank ; the thickness (*h*) being given.

13. Sketch and describe an eccentric sheave and strap for a large engine.

14. Make two views of the big end of a locomotive or other high speed connecting rod. Indicate the purpose and advantages of your design.

15. Sketch and describe a form of stuffing box which permits a slight amount of both lateral and angular displacement.

FOURTH YEAR.

MACHINE DESIGN.

(*Honours and Mechanical Engineering.*)

FRIDAY, APRIL 5TH:—AFTERNOON, 3 TO 5.

Examiner,..... .....J. T. NICOLSON, B.Sc.

1. Sketch and describe a locomotive axle box.

2. Show how to obtain circular arc approximations to cycloidal teeth by drawing two teeth in gear 3" pitch for spur and pinion 3 feet and 1 foot dia. respectively.

3. A dynamo running 1,000 revs. is belt driven from a motor running at same speed. Taking into consideration the effect of centrifugal force, what diameter of pulley will give the minimum width of belt?

4. Investigate the total stress in the most strained wire of a wire rope passing over a pulley of radius R; the tight side tension being T_2, δ the dia. and ν the number of wires.

Hence find the best ratio of R to δ.

5. Determine the diameter of cylinder of a simple condensing engine to indicate 500 H.P. at 60 revs., the stroke being 4 feet. Initial and back pressures 95 and 5 respectively (absolute). Nominal ratio of expansion 3. Clearance ratio 0.1. Diagram factor 0.9.

6. Find the greatest bending moment in a rectangular locomotive coupling rod due to inertia when running.

7. Investigate the stresses in a fly-wheel; the rim assumed joint less; taking the stretching of the arms into account.

8. Apply Zeuner's valve diagram to the designing of a Meyer expansion valve gear.

FOURTH YEAR.

THERMODYNAMICS.

WEDNESDAY, APRIL 17TH:—MORNING, 9 TO 1.

Examiner,..... .....JOHN T. NICHOLSON, B.Sc.

(*Not more than twelve*).

(Mechanical Students may not attempt Nos. 6, 7 or 8.)

1. Prove that $K_v = K_p - c$.

2. Show that the equation to the curve of adiabatic expansion of a perfect gas is $PV^{\gamma} = \text{constant}$.

3. Find the ratio of the final (τ_2) to the initial temperature (τ_1) when air is compressed adiabatically from pressure P_1 to pressure P_2.

Air at 60° F is compressed from a pressure of 14.7 lbs. to 100 lbs. absolute per square inch. The equation to the compression curve being $PV^{1\cdot2} =$ constant ; find the final temperature.

4. What are the three conditions of reversibility in a heat engine ?

5. Describe the cycle of a Stirling's regenerative air-engine ; and deduce the efficiency.

Sketch any form of the engine with explanations.

6. Make a tabular statement of the various quantities of heat usually distinguished in the heating and evaporating of water. Give an approximate formula for each.

7. The volume of one pound of dry saturated steam at 230 lbs. pressure absolute is two cubic feet, find the volume of one pound of wet steam (dryness fraction 0.75) at the same pressure (*a*) exactly, (*b*) approximately.

8. In a Peabody calorimeter the pressures by the steam pipe and calorimeter gauges are 215 and 25 respectively. The calorimeter temperature is 290° F. Find the dryness fraction. Barometer 14.7 lbs. per sq. in.

9. An engine uses steam of pressure P_1, volume per pound V_1 non-expansively, and rejects it at a pressure P_2. Find the efficiency.

What is its numerical value when P is 70 ; P_2 is 18 ; and V_1 is 6·11 ?

10. How nearly may the cycle of a steam engine be made to approach reversibility ? Calculate the efficiency of such an (ideal) engine.

11. Describe the action of a Joule air engine, and deduce its efficiency.

12. Draw compound diagrams for a compound engine of (*a*) the Woolf type, (*b*) the receiver type.

13. Describe the action in the cylinder of an Otto gas engine; draw an indicator diagram.

(*Mechanical Engineering and Honours students not less than four.*)

1. Show that the greatest amount of work which can be done (per lb. of fluid) in an engine receiving steam of dryness q_1, at temperature τ_1, expanding adiabatically to, and discharging at τ_2, is :

$$W = h_1 - h_2 - \tau_2 \log_e \frac{\tau_1}{\tau_2} + \frac{q_1 L_1 (\tau_1 - \tau_2)}{\tau_1}$$

What change would you make in this expression if the substance after expanding adiabatically to τ_2 (as before) is cooled at constant volume to τ_3 and discharged at this temperature ?

II. Find the entropy acquired when water is heated from τ_0 to τ_1, completely evaporated at τ_1, and then superheated to τ^1.

Sketch the entropy temperature diagram for this case, and state the effect on the ideal efficiency and real performance of such superheating.

III. Find the net horse-power expended in a Bell-Coleman Refrigerator of a capacity of 20 tons of ice per day (of 24 hours). Pressure and temperature in cold chamber 14.7 and 32° F.

Pressures of air at entrance to and exit from cooler 44.1 and 34.1 absolute, and temperature of air when delivered into expansion cylinder 90° Fah.

Initial and final temperatures of cooling water 60° and 90° F.

IV. Prove that in a compound engine with cranks at right angles, the condition of no drop in the H.P. cylinder is secured when

$$2\,R\,(x\,L-1) = 1-2\,\sqrt{x\,(1-x)}$$

where L = ratio of volumes of large and small cylinders
R = " " receiver " " "
and x = fractional cut off in $L\,P$ cylinder.

V. Find the theoretical maximum pressure of explosion; if the initial temperature be 90° F, the specific heat of the mixture at constant volume be 0.18; the ratio of volumes of air to gas used be 11.

The density of the gas is 0.44 that of air.

Find also the efficiency if the cycle be that of Otto and the ratios of expansion and compression be 2·7.

VI Show that in a complete cycle

$$\int \frac{d\,Q}{\tau} = o$$

where $d\,Q$ is the element of heat taken in or rejected at temperature .

FOURTH YEAR.

MECHANICAL ENGINEERING.

SATURDAY, APRIL 13TH :—MORNING, 9 TO 1.

Examiner, ... J. T. NICOLSON, B.Sc.

1. What grate and heating surface would you allow for a Cornish boiler of 60 H P? Determine the leading sizes of the boiler, and sketch it with setting.

2. How would you determine the thickness of a furnace flue 3′—0″ dia. for 100 lbs. pressure, stiffened with Adamson's rings?

3. Deduce Bach's formula for the weight of a plate valve guided above:

$$P = 62.4\ a \frac{u}{2g} \left[f + \left(\frac{d}{4\ c\ h} \right)^2 \right]$$

Where P is the valve weight in water
d " valve seat diameter.
a " " " area.
u " speed of flow through a.
and h " lift.

4. Rationalise Bach's formula for the valve resistance

$$\zeta = \zeta_1 + \beta \left(\frac{d}{h} \right)^2$$

5. A vertical single acting pump 7″ dia, 18″ stroke, stands 10 ft. above the well. It has no vacuum vessel: but the suction pipe of total length 14 feet has but two square bends in it and is 10″ dia., and is without strainer or foot valve. For the suction valve you may take $f = 2.5$ and $c = 0.62$ in the formula of question (3); and $\zeta_1 = 0.55$ and $\beta = 0.15$ in that of (4).

Find the greatest speed at which the pump will work without breaking the suction column.

6. Find a formula for the quantity of steam required per H P hour by a simple non-condensing high speed steam engine for power only. The initial pressure is p_1, the release pressure p_ℓ, and the back pressure p_b; r is the ratio of expansion, n its exponent, and u the volume of a lb. of steam at initial pressure.

7. What has been your experience with regard to the amount of steam per H P hour, that must be added to the quantity obtained in the last question in order to give the total steam which the engine will consume?

(a) With different ratios of expansion.

(b) At different speeds.

Give a formula for the missing quantity for such an engine.

8. Explain the harmonic valve diagram as applied to a Meyer expansion valve.

9. Draw a radial valve gear, and show how the laps are determined.

10. Sketch either a double ported slide-valve or a piston slide-valve.

FOURTH YEAR.

MECHANICAL ENGINEERING LABORATORY WORK.

THURSDAY, APRIL 11TH :—MORNING, 9 TO 12.

Examiners,..... { J. T. NICOLSON, B.Sc.
G. S. SMITH, B.A.Sc.

(*Not more than six.*)

1. In a steam dryness test by separation (with two separating vessels) find the dryness fraction in terms of the weighed quantities.

If five per cent. of the water drawn off from each vessel be lost by leakage, calculate effect on the estimation of dryness.

2. Obtain the expression for the dryness fraction in using a Peabody calorimeter.

The gauges on steampipe and calorimeter reading 102 lbs. and 15 lbs., respectively, and the thermometer 270° F ; find the dryness, when the barometer reads 14·7 lbs. per sq. in. What effect on the estimated dryness would be caused by (*a*) the calorimeter gauge reading 5 lbs. too high, (*b*) the thermometer reading 2° F. too high. (*Work out by logarithms.*)

3. Superpose dotted lines on the given indicator card to indicate the effect of : (*a*) lost motion between piston and pencil of indicator ; (*b*) a new or stretchy cord. Prove your results.

4. In a certain engine trial there were measured to the boiler 2 lbs. of coal and 16 lbs. of feed (the latter from 180° F , at 115 lbs. abs.) per I.H.P. per hour.

Two lbs. of water per H.P hr. were trapped at the separator and returned (without loss of temperature) to the boiler. Of these, one pound was due to priming, and one to condensation in the steam pipe. What allowance ought to have been made for this in calculating the I.H.P. : (*a*) per lb. of coal, (*b*) per lb. of feed ?

5. Show how to draw a temperature entropy diagram from a given indicator card ; the cylinder fee adnd clearance volume being known.

6. Show how to construct on the $T\phi$ diagram the lines of priming—and condensation—water heat recovery.

7. Make out a heat balance sheet for a boiler test. Describe concisely how you would conduct a complete boiler test, and enumerate the observations to be made.

8. An engine receives w lbs. of steam (dryness x_1, latent heat L_1' heat of liquid $_1$ reckoned from hot well temperature) per revolution. It raises q lbs. of condensing water $t°$ F. in temperature, and indicates H.P. horse power. Make out a heat balance sheet. Find the effect on the same of a mistake of one tankful too many (say m lbs.) in measuring : (*a*) the condensing water, (*b* the cylinder feed.

FIRST YEAR.

CHEMISTRY.

WEDNESDAY, APRIL 17TH :—MORNING, 9 TO 12.

Examiners, ... { B. J. HARRINGTON, B.A., PH.D.
NEVIL NORTON EVANS, M.A.Sc.

NOTE :—*Answer any ten questions.*

1. Name the alkali metals. Give their general properties and the preparation of one of them.

2. In what ways is commercial sodium chloride obtained? What are the properties and uses of this salt?

3. What would be the volume, under standard conditions, of the gases evolved from a mixture of 100 grams of potassium nitrate with the quantities of sulphur and carbon indicated by the following equation?—

$$2\ KNO_3 + S + 3\ C = K_2\ S + 2\ N + 3\ CO_2.$$

4. What is the principal constituent of ordinary plaster? Give an equation representing the chemical change that takes place when the plaster hardens.

5. Give the names, composition, and characteristic properties of the principal varieties of glass.

6. State what you know with regard to the sources and uses of the elements arsenic, antimony, and bismuth.

7. Describe carefully the production of cast iron from the ore, mentioning the chemical changes involved.

8. How does silver occur in nature? Mention its principal compounds and their uses.

9. How much sodium chloride is required to precipitate as chloride the silver in 1 gram of silver nitrate? (Ag, 108.)

10. An aqueous solution contains salts of copper, iron, and sodium. How would you separate the metals?

11. How would you distinguish (*a*) between a ferrous and a ferric salt, (*b*) between a mercurous and a mercuric salt, (*c*) between a stannous and a stannic salt?

12. How would you distinguish (*a*) between an oxalate and an acetate, (*b*) between a phosphate and a sulphate, (*c*) between a bromide and an iodide?

SECOND YEAR (*Departments of Mining and Practical Chemistry.*)

PRACTICAL CHEMISTRY.

SATURDAY, APRIL 6TH :—MORNING, 9 TO 12.

Examiners,.. ..... { B. J. HARRINGTON, B.A., PH.D.
NEVIL NORTON EVANS, M.A.SC.

NOTE :—*Students in Mining Course answer any eight questions ; students in Practical Chemistry Course, any ten.*

1. Give the principal reactions of 5 of the following metals : Silver, copper, antimony, nickel, zinc, strontium.

2. Give an outline of the "Preliminary Examination" to which an inorganic substance is submitted before its complete analysis is undertaken.

3. Describe the preparation of the solution for the analysis for acids, in the case of salts and industrial products.

4. What precautions are to be taken in precipitating, filtering, and washing the sulphides of the metals of the copper and arsenic groups ?

5. "A black precipitate is sometimes obtained in testing for cadmium with hydrogen sulphide, owing to some previous error in the analysis." How may it be determined whether cadmium is present in this precipitate or not ?

6. Define the terms oxidation and reduction as used in chemical analysis, giving examples.

7. Before testing for the metals of the iron group, the presence or absence of phosphoric acid must be determined. Why is this necessary, and how is it done ?

8. After precipitating the metals of the calcium group with ammonium carbonate, ammonium sulphate and ammonium oxalate are added to the solution. What is the object of adding each of the last two reagents ?

9. How much sulphuric acid is required to convert 1 gm. of barium chloride into barium sulphate ? (Ba. 137.)

10. Mention the principal effects produced on treating salts with strong sulphuric acid and warming.

11. Give the tests for 5 of the following acids : Sulphuric, hydrochloric, oxalic, phosphoric, carbonic, nitric.

THIRD YEAR (*Departments of Mining and Practical Chemistry.*)

PRACTICAL CHEMISTRY.

SATURDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiners, ... { B. J. HARRINGTON, B.A., PH.D.
NEVIL NORTON EVANS, M.A.Sc.

NOTE.—*Students in Mining Course answer any eight, Students in Practical Chemistry Course any ten questions.*

1. How may the melting point of a sample of bees-wax be determined?

2. Describe carefully the estimation of alumina in its soluble compounds.

3. What precautions are to be taken in the burning of filter papers containing precipitates of copper oxide, of silver chloride, or of calcium oxalate, and in the ignition of these precipitates? Why?

4. What is the general method for the estimation of SO_3 in sulphites?

5. How is magnesium estimated in a solution of magnesium sulphate?

6. Describe a method for the estimation of CO_2 in calcite.

7. How much sodium hydrate is required to precipitate the copper in 1 gm. of copper sulphate?

8. 10 gm. pure K_2SO_4 was dissolved in water and the solution made up to 500 c.c.; 50 c.c. of this solution was precipitated with barium chloride and the precipitate was found to weigh 1.25 gm.; from this the quantity of SO_4 in the 500 c.c. was calculated. What was the error?

9. Describe the estimation of potassium in potassium chloride, using platinic chloride as precipitant.

10. Describe briefly the analysis of a limestone.

11. Give in outline the method for determining the quantities of copper and zinc in a sample of brass.

12. Describe a method for the separation of tin and antimony in an alloy.

13. How may the Cr_2O_3 in a sample of chromite be determined?

SECOND AND THIRD YEARS (*Chemistry Course*).

ORGANIC CHEMISTRY.

MONDAY, APRIL 15TH :—MORNING, 9 TO 12.

Examiner,..... B. J. HARRINGTON, B.A., PH.D.

1. Distinguish between polymerism, isomerism and metamerism, giving examples.

2. Give illustrations of the methods employed in the synthesis of organic bodies, and in ascertaining their constitution.

3. Explain the distinction between primary, secondary, and tertiary alcohols.

4. How many butyl alcohols are theoretically possible? How many have been prepared? Show by means of formulæ the differences in their constitution.

5. Discuss the possibilities of isomerism in each of the three substitution products monobrombenzol, dibrombenzol, and tribrombenzol.

6. The base aniline gives with platinic chloride a definite crystalline product, 100 parts of which yield on ignition 32.99 parts of platinum. Deduce the molecular weight of the aniline.

7. Explain the miscroscopic distinction of the starches, giving sketches.

8. Explain the determination of the flash-point of an oil with Abel's apparatus.

9. Explain the chemical constitution of thymol, di-gallic acid, picric acid, pyridin and pyrogallol.

10. How is Fehling's solution prepared? Explain its use in the estimation of sugar.

B.A. SC. (*Mining Course*).

ASSAYING.

SATURDAY, APRIL 6TH :—MORNING, 9 TO 12.

Examiners,..... { B. J. HARRINGTON, B.A., PH.D.
WM. A. CARLYLE, M.A.E.

1. Point out the principal sources of error in the Cyanide process for the estimation of Copper.

2. Describe Lunge's process for the estimation of Sulphur in Pyrites.

3. An ore consists of a mixture of Copper Pyrites, Zinc-blende and Quartz. How would you estimate (*a*) the copper, (*b*) the zinc (gravimetrically)?

4. Explain the use of Stannous Chloride in the volumetric determination of Iron.

5. What is the difference between an ultimate and a proximate analysis of coal? Explain the interpretation of a proximate analysis. In what states does the sulphur exist in coals? How is the proportion in each state determined?

6. Describe the fire-assay of a galena-bearing limestone (at least 30 to 40 per cent. galena) that assays 364.5 oz. in silver. What must be most striven for in this method of assaying to prevent loss of lead?

7. Describe (*a*) the scorification of silver ore from a quartz vein and also of silver-bearing sulphide concentrates; (*b*) the parting of a gold-silver bead.

8. Describe fully the method of cupellation. Give an outline of the assay of a silver ore.

9. Given 8 to 10 lbs. of a supposed gold-bearing rock consisting of a large amount of pyrite and chalcopyrite in a calcite gangue, how would you proceed to make an equable sample of the lot? How would you assay it? And what flux would you use?

10. What is "Plattner's Flux No. 1"? For what ores can it be well used and in what quantity? What is an assay-ton, and why and how is it used?

THIRD YEAR.

MINING.

TUESDAY, APRIL 16TH, 1895.

Examiner,..... WILLIAM A. CARLYLE, M.A.E.

1. Design, giving side and end elevation on a scale of 1 in. to 1 foot, a wooden flume for carrying water to a gold placer claim. What grade is usually given a flume?

2. Given a claim of about 120 acres of gold-bearing gravel. (1) How would you prospect it, and what would you seek for in prospecting? (2) What are the three great essentials needed for the successful hydraulicking of a placer claim? (3) Give an outline of the method of hydraulic mining of gold gravels.

3. How would you open up and lay out for the most economical mining, a vein of medium grade silver ore, 8 to 10 feet thick, with a dip into the hillside of 50°? Give full sketches.

4. Show by sketches the timbering of a two compartment shaft by cribbing, showing also an arrangement at the top for protecting the shaft from falling sticks, etc.

5. Describe the Poetsch-Sooysmith system of shaft-sinking.

6. Describe, giving sketches, a system of mining out a deposit of hæmatite 30 to 40 feet thick. Dip 80°.

7. Give a sketch of a Gallows-frame for a shaft with one hoisting compartment. What points must be known and considered in the designing?

8. Describe the different kinds of cables for hoisting purposes.

9. Describe the Tail-rope system of under-ground transportation. Give sketches of automatic switches, explaining their working.

10 What do you mean by :—a volt, a plunger-lift, upraise, Pelton-wheel, friction band brake, dynamite, Rockarock, Giant No. 2?

B.A. Sc. (MINING COURSE).

METALLURGY.

TUESDAY, APRIL 16TH.

Examiner,..... WILLIAM A. CARLYLE, MA.E.

1. Name the chief ores of copper, giving composition. Give the chief physical and chemical characteristics of pure copper.

2. Describe : (1) The Herreschoff Improved, and (2) the Orford Furnaces as used in copper smelting. What marked difference exists between blast-furnaces for copper and silver-lead smelting, and why?

3. Give a description of the treatment of silver ores by Pan Amalgamation.

4. Explain the Ziervogel method for extracting silver from its ores, and specify the ores not suitable for this process.

5. Name, giving composition, the principal ores of Lead. Name, and give the chemical formula of, the typical slags formed in lead smelting. What is meant by "oxygen ratio," "acid ore," or a "basic flux"?

6. Describe the form of water-jacketted Furnace now mostly used in the smelting of silver-lead ores. What is meant by a 36" x 120" Furnace? What fuels are mostly used?

7. In what ways may iron act as a flux in silver-lead smelting?

8. How would you arrange a mill for treating daily 65 tons of gold ores worth $7.00 per ton in free gold, while the sulphides, amounting to 6 per cent. of the ore, assay 3-4 oz. of gold (per ton of sulphides). How would you treat these sulphides afterwards?

9. Describe a "Blake Crusher," "Mortar Block," "Cornish Rolls," "Embrey Concentrator," "Amalgamated Copper Plates."

ELECTRICAL ENGINEERING.

THIRD YEAR.

SATURDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....C. A. CARUS-WILSON, M.A., M.INST. E.E.

1. A Siemens Dynamometer reads 45 degrees with a current of 7 amperes. What current will give a reading of 170 degrees?

2. A coil of 10 turns, 1 cm. diam., carrying 2 amperes, is placed at the centre of a coil of 1000 turns, 40 cm. diam., carrying 8 amperes. Find the force in grammes on the small coil.

3. The vertical sides of the swinging coil of a Siemens Dynamometer of 6 turns are 12 cm. long and 8 cm. apart. Find the couple in grammes tending to twist the coil, due to the Earth's field, when a current of 25 amperes is passing. Take H to be 0.147.

4. A wrought iron rod 1.3 sq. cm. in section when tested in a yoke gives 17,000 lines with 0.7 amperes through 2,500 turns. If the clear length of the rod is 32 cm., find its permeability, (1) neglecting, (2) considering, the permeance of the yoke, which is 80 cm.

5. Given a 100 volt circuit, a volt meter and a set of standard resistance coils, find the resistance of the voltmeter by its own deflection.

6. Given a 100 volt circuit and nine incandescent lamps of equal resistance. Connect the lamps up in such a way that you can find two points between which the difference of potential is exactly 55 volts.

7. An iron ring is split across, radially, so that the length of the iron is 140 times that of the air gap. Find the permeability of the iron when the circuit is magnetised to such a degree that the ampere turns required for the gap are 2.3 times those required for the iron.

8. If a force P is required to separate two iron rods having an induction N across their common ends, what force would be required if the ends were coned, the solid angle of the cone being 90 degrees, the induction remaining the same as before?

ELECTRICAL ENGINEERING.

FOURTH YEAR.

SATURDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,..... ... .C. A. CARUS-WILSON, M.A., M. INST. E.E.

1. The fixed scale of a Kelvin Balance is divided into 50 divisions, each reading 0.01 ampere. What is the current when the riding weight is at the centre of the beam?

2. Give a drawing, with explanation of an arrangement for breaking the charging circuit of a set of accumulators when the charging e.m.f. falls too low, and making it again when it rises to the normal value.

3. A self-excited generator is wound for 107 volts; the full load losses amount to 5 volts; the field current on open circuit is 8 amperes, on ful load 9.7 amperes. Find the resistance of the rheostat with which this regulation can be effected.

4. A four pole generator is cross connected to run with two brushes. There are 700 conductors around the armature; the area of each polar gap is 2000 square cms; the gap induction is 5,000. Find the e.m.f. when running at 450.

5. The conductors of a ring wound ironclad armature are laid two in a slot, so that the distance between successive conductors is uneven. Show how this arrangement may be the cause of every other bar on the commutator being burnt.

6. A Wood arc light dynamo with 100 sections in the commutator gives 1,200 volts. Two exploring brushes are set one section apart, and connected to a voltmeter; what will be the maximum reading?

7. A locomotive weighing 60,000 pounds is driven by two gearless motors connected in parallel on a 500 volt circuit, and draws 40 amperes when running on a level at 13 miles an hour. If the resistance of each motor is one ohm, the wheels 33 inches in diameter, and m constant, find the speed in miles an hour up a grade of 1 in 20.

8. A shunt motor runs an elevator car weighing 1,500 pounds at 240 feet per minute; the rope drum is 4 feet in diameter; the velocity ratio of drum and motor is 70 to 1; the resistance of the motor is 0. 1 ohm. Find the current when running up at full speed on a 125 volt circuit.

ELECTRICAL ENGINEERING.

FOURTH YEAR.

WEDNESDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner, ...C. A. CARUS-WILSON, M.A., M. INST. E.E

1. A gearless motor has to exert a tractive effort of 800 pounds on 33 inch wheels when running at 12 miles an hour on a 500 volt line. The resistance of the motor is 1.5 ohms. Find the values of m. and c.

2. A motor generator runs at 550 revolutions on a 588 volt line, with 64 amperes in the primary, and 280 amperes in the secondary. The primary resistance is 0.175 ohms and the ratio of the windings 5 to 1. Find the torque in inch pounds required to make up the internal losses.

3. A shunt motor of 0.1 ohm resistance runs at 1200 revolutions on a 100 volt circuit, drawing 8 amperes at no load. Find the current at the most efficient speed.

4. A transformer tested on open secondary gives the following results:—primary volts, 2,400, amperes 0.076, resistance 7.73 ohms. Secondary volts 101, resistance 0.0163, power factor 0.81. Find the efficiency for a load of 61.6 amperes in the secondary.

5. Find the Time Constant of a magnetic circuit having 460 turns, 360 square cms. cross section of iron, 30 cms. length of iron, permeability constant, equal to 2,000, resistance of winding 27 ohms.

6. What must be the self-induction of a coil which, when placed in series with a 10 ampere arc lamp on a 100 volt alternating circuit (n being 100) will reduce the volts on the lamp to 40 ?

7. A wattmeter in the primary of a closed circuit transformer reads 2 per cent. too low at full load and 19 per cent. too high on open secondary; find the power factor in the latter case.

8. Prove that in the solution of the equation $\frac{dc}{dt} + \frac{R}{L} c = \frac{E}{L}$ sin ϕt the second term may be neglected.

SESSIONAL EXAMINATION, 1895.

ZOOLOGY.

FIRST YEAR, MEDICINE.

THURSDAY, MARCH 28TH :—2 TO 5 P.M.

Examiner,.....W. E. DEEKS, B.A., M.D.

1. Describe fully the structure of the *Hexactima*, and give examples of some of the principal forms.

2. Write on the structure and life history of the *Cestoda* or *Trematoda*.

3. What is meant by the following Zoological terms? Give examples. Metamorphosis, Alternation of generations, Polymorphism, Parthenogenesis.

4. Describe the structure, and discuss the position in the animal scale, of the *Tunicata*, morphologically and embryologically.

5. Select some type of Canadian insect, and describe its structure and life history.

6. Classify the *Gymnomyxa*, and give examples.

7. How would you classify the following :—Hydra, shark, crayfish, leech, cuttlefish, snail, barnacle, earthworm, mussel, seapen.

8. Describe the structure of the oyster, and show how it differs from any morphological type of the class to which it belongs.

9. Briefly characterize and give examples of the following :—*Nematoda*, *Ciliata*, *Araneida*, *Teleostei*, *Asteroidea*, *Scyphomedusa*, *Coleoptera*, *Polyzoa*, *Octactinia*, *Polychaetae*.

10. Refer to their classes and orders the specimens exhibited.

Property of Library

Faculty of Law.

McGILL UNIVERSITY LIBRARY
(Faculty of Law)

FACULTY OF LAW.

SESSIONAL EXAMINATION.

INTERNATIONAL AND CONSTITUTIONAL LAW.

SATURDAY, 13TH APRIL, 1895.

Examiner,..... .....N. W. TRENHOLME, D.C.L.

1. What is international law, public and private, and point out the nature and characteristics of each?

2. Under what two heads may all questions of international private law be classed and treated, and explain each?

3. What matters are governed in our law by:
   (1) the lex fori;
   (2) the lex domicilii;
   (3) the lex loci contractus?
Explain the meaning of these terms and cite cases in illustration.

4. What rules of maritime war were agreed upon at the treaty of Paris of 1856, and point out the changes they effected, and the meaning of blockade, contraband of war, rights and obligations of neutrals, rule of 1756, armed neutrality, Berlin and Milan Decrees, Orders in Council, Prize court?

5. Explain the nature and origin of the Constitution of Canada and the principal Statutes to be considered in its interpretation, pointing out analogies and differences between it and the Constitution of the United States?

6. What is the true nature of the Provincial Governments under our system, and give the arguments pro and con as regards their sovereign or subordinate position?

7. Give and explain the distribution of powers under the B. N. A, Act, 1867, and cite cases illustrating the powers of the Dominion and of the Provinces?

8. Explain the following: the Queen, the Crown, the Executive authority, Privy Council, Cabinet, Ministry, Executive Council, responsible government, money bills?

9. What is the Manitoba School Question?

INSURANCE.

SATURDAY, 30TH MARCH, 1895.

Examiner, ... N. W. TRENHOLME, D.C.L.

1. Define the contract of insurance, and write briefly on its origin and growth, noting important legislative enactments on the subject and the principal sources of our law.

2. Explain the meaning of the following terms and their importance :— Representation, concealment, warranty, deviation, increase of risk, barratry, sue and labor.

3. What is the memorandum in marine insurance, and explain the meaning of the following in a policy : —

Corn, fish, salt, fruit and seed are warranted free from average unless general, or the ship be stranded.

Sugar, etc., warranted free from average under five pounds per cent.

4. Explain the different kinds of losses, and when and subject to what conditions the insured may claim for a total constructive loss, pointing out any difference in English law on this latter point.

5. What is general average, and how is general average contribution borne by the owner and how by the insurer ?

6. Goods worth $15,000 and insured for $10,000 are damaged and sold for $5,000, but would have sold for $20,000 if sound. What is the insurer's liability ?

7. A effects an insurance for $6,000 on a property worth $12,000, under a policy containing a 75 per cent. co-insurance clause. A loss of $4,000 occurs. What is the insurer's liability ?

What would it be without such a clause in a fire and in a marine policy ?

8. Explain the rights and obligations of parties in case of an insurance in favor of a mortgagee.

9. What is our law as to assignment of policies and transfer of object insured ?

10. Give a short account of the principal provisions of our statute relating to insurance for benefit of wife and on children.

11. What was held in the following cases :—

Lafleur and The Citizens.
Archambault and Lamère.
Black and The National.
Vezina and N.Y. Life.
Peddie and Quebec Fire Co.

N.B.—First and Second Years will answer first 7 questions.

CRIMINAL LAW.

SATURDAY, 23RD FEBRUARY, 1895.

Examiner,.....N. W. TRENHOLME, Q.C., D.C.L.

1. Write briefly on criminal law, particularly on the system in force in Canada, its introduction, nature, merits and defects, comparing it with the system it displaced; the principal changes and reforms in it since its introduction, including those made by the Code?

2. Give the principal grounds of justification or excuse in criminal law; with particular account of the rules relative to insanity, their origin, nature, merits and defects?

3. What are the principal offences against the state or community as a whole, with some account of the law statutory and common on two principal offences against the public order?

4. How may offences against property be classed; define theft at common law and by our Code, and give a short account of the growth of the law on this subject, noticing false pretences, embezzlement, and breaches of trust?

A buys a horse from B, who delivers it on the strength of receiving A's cheque for the price, but which cheque proves worthless, as A well knew. What and wherein is the offence if any, and if an offence, draft an indictment for it?

5. What are the principal offences against the person, with particular account of culpable homicide and its different kinds, including definition of murder at common law and under the Code. What was the Coventry Act; what Lord Ellenborough's Act?

6. Describe the different parties that there may be to an offence, with any changes made by the Code on this point?

7. Give some account of the proceedings before the magistrate upon an enquiry into an indictable offence, and of his principal duties and powers in connection with the same, including his discretionary powers?

8. In what principal ways may a person be accused of an indictable offence, with an account of the most usual of these and the requirements for its validity? Note any important changes in the law on this subject that you know of?

9. Explain the successive steps in the prosecution of an indictable offence, from finding the indictment to verdict, pointing out important objections that may arise or be taken, and how and when, to or in respect of the indictment, the juries or jurors, or any proceeding at the trial, and how they are determined?

10. When and in what offences and on what principle may a verdict be found for a different offence from that charged in the indictment, and when is a trial for an attempt a bar to a trial for the full offence or *vice versa*?

11. What pleas, special and general, may be pleaded under the Code; describe each, and when and how and with what effect it may be pleaded, including also pleas in libel and mention of statutes bearing on defence in libel?

12. What do you understand by "Speedy Trials of Indictable Offences;" "Summary Trials of Indictable Offences;" "Summary Convictions"?

N.B.—First Year, any seven questions and 2½ hours time.
Second Year, any 9 questions and 3 hours.
Third Year, all the questions and 4 hours.

LAW OF OBLIGATIONS.

SATURDAY, 24TH NOVEMBER, 1894:—3 TO 6 P.M.

Examiner,.....N. W. TRENHOLME, Q.C., D.C.L.

1. Define law and its principal divisions; give the sources of our law.

2. Define "obligation;" give the different causes and kinds of obligations--pointing out distinctions.

3. Give in historic order the different kinds of contract in Roman Law, and indicate how they illustrate the growth of the law of contract.

4. What are the different defects in contracts, and when and under what conditions may each be invoked?

5. When, on what principle and under what conditions may creditors exercise the rights of their debtors or attack contracts or transactions entered into by their debtors?

6. Describe the different kinds of incapacity in our law and the effect of each.

7. When is a debtor liable for failure to perform his obligation, and what are the rights of the debtor in case of failure in different cases? Give the leading rules as to damages.

8. Classify and describe the different ways in which obligations are extinguished, with mention of the requirements of a valid payment, tender, compensation, novation and subrogation, in different cases.

9. Give a short account of the origin of our law of evidence and of the different kinds of evidence and leading rules governing its adduction.

10. Translate the following:—

(*a*) Poena autem injuriarum ex lege duodecem tabularum propter membrum quidem ruptum talio erat: propter os vero fractum nummariae poenae erant constitutae quasi in magna veterum paupertate: sed postea praetores permittebant ipsis qui injuriam passi sunt eam aestimare, ut judex vel tanti condemnet, quanti injuriam passus aestimarerit, vel minoris prout ei visum fuerit: sed poena quidem injuriae, quae ex lege duodecem tabularum introducta est, in desuetudinem abiit; quam autem praetores introduxerunt, quae etiam hororaria appellatur, in judiciis frequentatur.

(*b*) Item exercitor navis aut cauponae aut stabuli de dolo aut facto, quod in nave aut in caupona aut aut in stabulo factum erit, quasi ex maleficio teneri videtur, si modo ipsius nullum est maleficium, sed alicujus eorum, quorum opera navem aut cauponam aut stabulum exerceret: cum enim neque ex contractu sit adversus eum constituta haec actio et aliquatenus culpae reus est, quod opera malorum hominum uteretur ideo quasi ex maleficio teneri videtur.

11. Give some account of the development of the law of *delits* and *quasi-delits*, making use of the foregoing extracts in that connection.

LAW OF REAL ESTATE.

MONDAY, APRIL 22ND, 1895:—4 TO 6 P.M.

Examiner,.....PROFESSOR WURTELE, D.C.L.

1. Under what tenures are lands now held in this Province?

2. Explain the nature of these tenures.

3. How and when was the Seigniorial tenure abolished?

4. What is ownership, and to what restrictions is it subjected?

5. What are the rights and obligations of a mere possessor?

6. What constitutes a possessor in good faith, and when does such good faith cease?

7. How is ownership acquired?

8. What are the different rights which a person may have on real estate?

9. How are the three classes of property—that belonging to the crown, that belonging to municipal and other corporations, and that belonging to individuals—governed?

10. When and how can an owner be compelled to give up his property

COMMERCIAL LAW, AGENCY, PARTNERSHIP.

FRIDAY, 14TH DECEMBER, 1894.

Examiner,..... .....PROFESSOR DAVIDSON, Q.C., D.C.L.

1. Give definition of the Contract of Agency, and explain how the same may be formed, by and between whom. Name the principal classes of Mercantile Agents, and distinguish between each.

2. Explain the terms "general," "special," "del credere," as applied to agents.

3. Explain the chief duties of the agent relatively to his principal, and the rights of the former as against the latter.

4. How is the power of a Mercantile Agent to bind his principal determined in regard to the latter and to third parties? and how is his remuneration determined?

5. How and when may the relation of principal and agent be revoked? and what, if any, limitation is there on the right of the former in this respect?

6. Give definition of the Contract of Partnership, and point out its essentials; and state the rules laid down by the author for determining whether each relationship exists or not in the absence of explicit agreement between the parties?

7. Explain the terms "Dormant," "Nominal," "Limited" Partner respectively, and distinguish as to their liability towards persons dealing with the firm of which they severally are members.

8. Explain the position and powers of the several partners in a firm in the absence of specific agreement thereto (1) as to the partnership being, (2) as to the other members thereof, and (3) as to third parties, and show the connection between Agency and Partnership.

9. How is the will of the partnership, being composed of say 5 persons, determined in the absence of specific agreement? and state when such determination is conclusive and when not?

10. How may a partnership be dissolved; and explain the results following dissolution?

11. Explain the chief differences between a partnership proper and a joint stock company —answer fully.

EXAMINATION ON OBLIGATIONS AND CONTRACTS.

SATURDAY, MARCH, 9TH 1895 :—3 TO 5 P.M.

Examiner,..... .....PROF. GEOFFRION.

1. L'acte volontaire mais illicite peut-il donner lieu à un quasi contrat ; sinon, quelle espèce d'obligation peut résulter d'un tel acte ?

2. Dans le cas de gestion d'affaires, est-il nécessaire que le maitre ou propriétaire dont l'affaire a été gérée soit capable de contracter pour être obligé ? Expliquez la différence des obligations lorsque l'affaire gérée était nécessaire ou seulement utile ?

3. A., porteur d'un billet promissoire, en reçoit le paiement de B., qui ernonnément s'en croit le débiteur ; ce dernier découvre son erreur, et rapporte le billet à A., après la prescription de 5 ans : B. peut-il recouvrer ce qu'il a payé à A. par l'action *condictio indebiti ;* pourrait-il recouvrer s'il découvrait son erreur avant la prescription, mais après que C. le débiteur véritable du billet fût devenu insolvable ?

4. Quels sont les recours contre celui qui a reçu de bonne foi ce qui ne lui était pas dû, et qui a disposé de la chose recue : 1° à titre onéreux mais pour un prix moindre que la valeur véritable ; 2° à titre purement gratuit ?

5. Quelles sont les différences entre un contrat tacite et un quasi-contrat ?

6. Expliquez ce que signifient les maximes de droit : damnum absque injuriâ ——— : sic utere tuo ut alienum non laedas ?

7. Quelle est la distinction entre choses hors du commerce et choses retirées du commerce ?

8. Laquelle action donne lieu l'obligation de faire ; *quid* l'obligation de donner ?

9. Pourquoi la mise en demeure doit-elle être par écrit lorsque le contrat est par écrit ; l'absence d'écrit peut-elle être suppléée par l'aveu de la partie ?

10. Enumérez les cas où les intérêts sont exigibles indépendamment de la convention ?

11. Quelle différence y a-t-il entre dommages *moratoires* et dommages compensatoires ?

LEGAL HISTORY AND BIBLIOGRAPHY.

TUESDAY, 11TH DECEMBER, 1894:—4 TO 6 P M.

Examiner, ... ARCH. McGOUN, M.A., B.C.L.

1. Give the date of the Treaty of Paris; state what territories were ceded to Great Britain; give the substance of stipulations regarding religious freedom.

2. What effect had the conquest or cession on the public and criminal law of Canada?

3. Give outline of the Royal Proclamation of October, 1763.

4. What was the decision in *Stuart* vs. *Bowman*, and in *Wilcox* vs. *Wilcox*, in relation to the introduction of English private law?

5. What did the Quebec Act 1774 provide regarding Civil and Criminal law respectively, and to what lands did its provisions apply?

6. What was the composition and what the powers of the Legislative Assembly under the Constitutional Act, 1791?

7. What Acts were passed during the period covered by the Constitutional Act in relation to land tenure?

8. In what respect did the Union Act of 1841 differ from the system recommended in Lord Durham's Report?

9. Mention some of the enactments by which municipal institutions were introduced into Canada.

10. How was the Civil Code of Lower Canada prepared and enacted?

11. What is the provision of the British North America Act, 1867, relating to the disallowance of bills passed (*a*) by the Parliament of Canada, (*b*) by the Legislatures of the Provinces?

12. What are the clauses in this Act respecting education?

13. Mention some of the treaties that have been passed between Great Britain and the United States respecting the boundaries of Canada.

CIVIL PROCEDURE.

WEDNESDAY, DECEMBER 12TH :—AFTERNOON, 2 TO 5.

Examiner,..... PROF. FORTIN.

1. What conditions are required to enable a person to bring an action? Describe the different kinds of actions. What is the difference between a real and a mixed action? Between a possessory and a petitory action?

2. Before what tribunal are personal actions brought? Real and mixed actions? *Quid* if there be several defendants? Against a public officer? What preliminary procedure is required in the latter?

3. What is the effect of an action legally instituted? Give a full description of the different pleas that may be fyled to an action? What is the difference between a demurrer and a peremptory exception?

4. How is issue joined:
Upon a demurrer? Upon a *défense au fond en faits?* Upon a peremptory exception?

5. Describe the different kinds of judgments. Which are appealable? Which are not?

6. What are the remedies against a judgment, and upon what grounds do they lie?

7. How is a judgment executed? *Quid* if the parties have died or if their civil status has changed:
Before execution has commenced?
After?

8. What means of execution may be exercised by the creditor against the defendant and against third parties?

9. Who can oppose the seizure of moveables, and upon what grounds? What oppositions may be made to the sale of immoveables? What may be required from the opposant to secure charges?

10. What rights are discharged by the sheriff's sale? What are not?

11. *Quid* as to the right of ownership?
When the owner is in possession *animo domini?*

12. Upon what grounds may a sheriff's sale be set aside:
At the instance of the debtor, or other interested person?
At the suit of the purchaser?

N.B.—Second and Third Years' Students are not required to answer the first four questions.

NOTARIAL LAW AND PROCEDURE.

Examiner, ... PROF. MARLER, B.A., B.C.L.

1. How was property described before, and what changes were introduced by the Cadastral System?

2. Describe an Emplacement forming part of an Official Lot, and bounded in front by a street and on the three other sides by other parts of the same Lot.

3. What do you mean by a Re-subdivision Plan, and under what circumstances can it be made?

4. You have purchased a house separated from houses on either side by walls used in common; what will be the nature of your enquiries as to these walls?

5. A husband sells, his wife being alive, property purchased by him during the marriage; is the signature of the wife to the deed necessary?

6. How can you add to legal warranty? How diminish its effects?

7. In what cases can a man sell, after his wife's death, property purchased during the community which existed between them?

8. Describe fully the conditions necessary for a continuation of community.

9. In what respect do the powers of the husband as to the sale of property of the continuation of community differ from those he has over the property of the community itself?

10. What are the requirements of a declaration of transmission in case of a succession?

CIVIL LAW.

WEDNESDAY, 17TH APRIL, 1895:—4 TO 6 P.M.

Examiner, ... PROFESSOR DOHERTY, D.C.L.

1. To what extent does the law in regulating a succession consider the nature or origin of the property comprising it? In what respect does the law as enacted by the Civil Code differ in this regard from the previously existing law?

2. What do you understand by representation? In what cases does it take place?

3. A dies intestate. At his death there are living B and C his sons, D, E and F, his grand-children; D and E being the children of a predeceased daughter of A, and F being the child of a predeceased son of A. C, who is declared unworthy to inherit, has one child, I. To whom does the succession devolve, and what will be the share of each of the persons to whom it devolves? Which, if any, of the persons above named come to the succession in their own right, and which, if any, come by representation?

4. A dies intestate, leaving as his only surviving relatives his father B, his brother C, two nephews D and E, children of a predeceased brother, and his grandfather F. In the succession is an immoveable which had been given to A by F. To whom and in what shares does the succession devolve?

5. How is the position of a person called to a succession affected: (*a*) by his acceptance of the succession? (*b*) by his renunciation of the succession?

6. On what grounds can a person of full age be relieved of the acceptance made by him of a succession? On what grounds can a minor be relieved of the acceptance made in his behalf by his tutor duly authorized so to do?

7. In what case can the creditors of an heir, who has accepted, attack his acceptance? In what case can the creditors of the heir who has renounced attack his renunciation? What is the effect of the exercise of such right by the creditors of the heir who has renounced?

8. What effect has an agreement between undivided owners to remain in undivided ownership? What is the effect of an order inserted by a testator in his will, that the property bequeathed by him shall be held in undivided ownership by the legatees thereof?

9. What do you understand by the obligation to make returns? By whom and to whom are returns due?

10. What difference is there in the nature of the obligation of an heir bound to make return of a moveable, and that of an heir bound to make return of an immoveable? How is the obligation of the former affected by the perishing before the partition of the thing subject to be returned? How is the obligation of the latter affected by the same event?

BANKING AND DOCUMENTS OF TITLE.

FRIDAY, 19TH APRIL, 1895 :—AFTERNOON, 4 TO 6.

Examiner,..... PROF. ABBOTT, Q.C.

1. Are Banks subject to the jurisdiction of the Legislatures of the Provinces in which they do business? Give reasons for answer.

2. Give the essential elements of the business of Banking.

3. State the conditions required by statute to be complied with by a Bank before commencing business.

4. What is the security for the payment of notes issued by Banks?

5. Explain the nature of a Bank's liability to redeem any of its notes in the following case: when (*a*) forged, (*b*) stolen, (*c*) lost, (*d*) destroyed, (*e*) partially destroyed.

6. State briefly the powers of a Bank as to (*a*) lending money and making advances, and the securities upon which such loans and advances may and may not be made; (*b*) acquiring, holding or dealing in personal and real property.

7. Are the shares in the capital stock of a Bank real or personal estate? And how does the property in them pass?

8. A by his will bequeathed his property in equal shares to his four children as institutes and to his grandchildren as substitutes, and appointed B, C and D his executors with full powers, including powers of sale. At his death he held 2,000 shares in a Bank. The will was deposited in the Bank, and the shares placed in the names of the executors, who transferred 500 shares to C, one of the testator's children. C disposed of the shares for his personal benefit. Would the Bank be liable at the suit of C's children for the value of the shares? Give reasons briefly.

9. Define documents of title.

10. Explain what title is conferred upon a holder in good faith by the transfer to him of (*a*) warehouse receipts, (*b*) bills of lading; and what are his rights upon the goods and against the party issuing the document in each case?

MARRIAGE COVENANTS.

SATURDAY, 15TH DECEMBER, 1894 :—AFTERNOON, 4 to 6.

Examiner,..... PROF. E. LAFLEUR.

1. In what form must marriage covenants be made in the Province of Quebec? What form or forms must be followed if the marriage contract is executed beyond the limits of the Province of Quebec, in order that such contract may be valid in that Province?

2. Can a contract of marriage be validly made by (*a*) a minor, (*b*) an interdict, (*c*) a person provided with a judicial adviser, (*d*) a person civilly dead?

3. A marriage is celebrated in Montreal between an American citizen domiciled in New York and an Englishwoman domiciled in the Province of Quebec. No ante-nuptial contract is made, and after the marriage the consorts take up their residence in New York. A few years later the husband buys a house in Montreal, and ultimately the consorts abandon their domicile in New York and establish their permanent home in Montreal. After this change of domicile the husband purchases more real estate in Montreal:

(*a*) Does community of property, according to the laws of Quebec, result from such marriage; and if so, do the house purchased by the husband while the consorts were domiciled in New York and the real estate purchased by him while they were domiciled in Montreal fall in community?

(*b*) Can the wife claim dower on these immoveables?

(*c*) Could the rights of the consorts as to these immoveables be changed by a post-nuptial settlement executed between them while they were still domiciled in New York, assuming that such post-nuptial settlement were permitted by the laws of New York.

4. Enumerate the assets and liabilities of the community.

5. When can the wife obtain a judicial separation as to property? What rights have the creditors of the wife in regard to demanding or resisting such separation? Does the separation entitle the wife to claim dower?

6. What are the rights and liabilities of the wife when she renounces the community?

7. What is the effect of a bequest by one consort to a third person of an object belonging to the community?

8. Does a husband retain any power of disposition over objects comprised in a gift in contemplation of death contained in a marriage contract?

9. What does the customary dower of the wife and children consist in?

HISTORY OF ROMAN LAW, AND FIRST BOOK OF JUSTINIAN'S INSTITUTES.

Time: two hours.

Examiner, ... PERCY C. RYAN, B.C.L.

1. What is meant by the comparative method of research in social science?

Name authors who have adopted it. State three of its principal conclusions as to the beginnings of law.

2. Describe the nature and significance of patriarchal rule, and exemplify by references to the Patria Potestas of the Romans.

3. Into what periods is the history of Roman Law divided? What stage in its development does each represent?

4. Outline the Servian constitution.

5. Sketch the Agrarian legislation of the Romans.

6. Name the legislative bodies and principal magistrates during the Republic, and state their functions.

7. What is meant by: *connubium, plebs, populus, jus sacrum, confarreatio, manus, jus postliminii.*

8. Trace the evolution of the Roman Will.

9. Define status. What were its elements? How were they lost?

10. Give an account of the law of curatorship (*curatio*).

UNIVERSITY SCHOOL EXAMINATIONS, 1895.

I. Preliminary Subjects.

(In the order given in the Regulations.)

UNIVERSITY SCHOOL EXAMINATIONS.

I. PRELIMINARY SUBJECTS.

WRITING.

THURSDAY, JUNE 6TH :—AFTERNOON, 4.15 TO 4.30.

Examiner, ...G. W. PARMELEE, B.A.

1. Write:—

The lily is the national emblem of France; the rose, of England; the thistle, of Scotland; the leek, of Wales; and the shamrock, of Ireland.

2. Write all the letters of the alphabet in capitals.

3. Give your post-office address, and the name of your school.

4. If you use the vertical system of writing, say how long it is since you began to do so.

DICTATION.

MONDAY, JUNE 3RD:—MORNING, 10.30 TO 11.30.

Examiner,..... .....CHAS. E. MOYSE, BA.

A modern wooden ruin is of itself the least interesting, and at the same time the most depressing, object imaginable. The massive structures of antiquity that are everywhere to be met with in Europe, exhibit the remains of great strength, and, though injured and defaced by the slow and almost imperceptible agency of time, promise to continue thus mutilated for ages to come. They awaken the images of departed generations, and are sanctified by legend and by tale. But a wooden ruin shows rank and rapid decay, concentrates its interest on one family, or one man, and resembles a mangled corpse, rather than the monument that covers it. It has no historical interest, no ancestral record. It awakens not the imagination. The poet finds no inspiration in it, and the antiquary no interest. It speaks only of death and decay, of recent calamity and vegetable decomposition. The very air about it is close, dank, and unwholesome. It has no grace, no strength, no beauty, but looks de-

formed, gross and repulsive. Even the faded colour of a painted wooden house, the tarnished gilding of its decorations, the corroded iron of its fastenings, and its crumbling materials, all indicate recent use and temporary habitation. It is but a short time since this mansion was tenanted by its royal master, and in this brief space, how great has been the devastation of the elements! A few years more, and all trace of it will have disappeared forever. Its very size will soon become a matter of doubt. The forest is fast reclaiming its own, and the lawns and ornamented gardens, annually sown with seeds scattered by the winds from the surrounding woods, are relapsing into a state of nature, and exhibiting in detached patches a young growth of such trees as are common to the country.

Haliburton.

Directions (for the Sub-Examiner only).—The extract is to be read three times. The first reading is intended to give a general idea of the character of the extract. Candidates will write as the extract is being read a second time. The third reading is intended to be a guide to punctuation. The sub-examiner will mention the occurrence of full stops. *As it is of vital importance that candidates should not be left in doubt regarding the pronunciation of a word or the connection of a phrase, the sub-examiner may, if requested, repeat portions of the extract as often as he deems it reasonable to do so, but he is not to give the meaning of any word or expression.* Candidates should be told that they may request repetition.

ENGLISH GRAMMAR.

MONDAY, JUNE 3RD:—MORNING, 9 TO 10.30.

Examiner,..... INSPECTOR R. J. HEWTON, M.A.

[N.B.—Questions 1 and 4 must be attempted by all. Answer *only* two questions from each section.]

I.

1. Analysis.—
   (*a*) "One morn a Peri at the gate
   Of Eden stood, disconsolate."
   (*b*) Come when you please.
   (*c*) Darkness, which might be felt, was over the land.

2. Inflect the personal pronouns.

3. What are participles? Illustrate each of their uses in sentences.

II.

4. Parse (write the words in column) :—
He strode, as though he were in pain.

5. What is the effect of the English termination *en* with (i) nouns, (ii) adjectives, (iii) verbs? Give an illustration of each.

6. Give the *past tense* and *pass. part.* of the following verbs:—chide, take, wind, catch, feed, wend, pin, slay, lay, let.

III.

7. Compare: old, late, much, wilful, bright, bad, far, inner, outer, fore.

8. Define adverbs, and show the two-fold function of a conjunctive adverb.

9. Give the methods by which English nouns form their plurals, with examples of each method.

ARITHMETIC.

TUESDAY, 4TH JUNE :—MORNING, 9 TO 10.30.

Examiners, ... { G. H. CHANDLER, M.A.
REV. PRINCIPAL ADAMS, D.C.L.
H. M. TORY, B.A.

Answer two questions from each division. All the work must be shown; results alone will not be accepted.

I.

1. Give the table of avoirdupoids weight; also (*b*) the number of grains in the pound of this weight, and (*c*) the number of pounds in a gallon of water.

2. Find the number of minute divisions between the minute and hour hands of a clock at twenty minutes past eleven.

3. A grocer added water to 300 gallons of syrup worth 7 cents per gallon, and sold at 6 cents per gallon, making a profit of 12 per cent. How much water was added?

II.

4. What is the difference between the simple and the compound interest on $500 for 3 years at 5 per cent. per annum?

5. If one chain be 66 feet, find the number of square chains in an acre.

6. Find to 3 decimal places the square root of

$$3 + \frac{1}{7 + \frac{1}{16}}$$

III.

7. Each edge of a cube of brass is 5 centimetres long; find the weight in kilograms, assuming brass to be 8 times as heavy as water.

8. Find in decimals of an inch the difference between 12 inches and 30 centimetres.

9. If a cubic foot of glass weigh 156 lbs, find in lbs. and also in kilograms the weight of a pane of glass 24 in. long, 20 in. wide, and $\frac{1}{8}$ in. thick.

GEOGRAPHY.

MONDAY, JUNE 3RD:—MORNING, 9 TO 10.

Examiner,..... JOHN COX, M.A.

1. Explain the terms *atoll*, *cyclone*, *ecliptic*, *meridian*, *monsoon*, *moraine*, *gulf stream*, *trade wind*, *latitude*, *glacier*.

2. Name the countries washed by (1) the Mediterranean Sea, (2) the Indian Ocean; and give the capital of each.

3. Draw a sketch map of North America, and mark the positions of *four* (only) of each of the following, viz.: most important (1) rivers, (2) mountain ranges, (3) lakes, (4) railways, (5) cities.

4. What are the chief products of (1) Canada, (2) Ceylon, (3) Japan, (4) South Africa, (5) Russia?

5. A person travelling for pleasure wishes to go round the world eastwards from Ottawa, keeping north of the Equator. Mention in order the principal cities you would advise him to visit, naming the railways and steam lines he would take on some of the principal stages of his journey.

BRITISH AND CANADIAN HISTORY.

TUESDAY, JUNE 4TH :—MORNING, 10.30 TO 12.

Examiner,..... .....INSPECTOR R. J. HEWTON, M.A.

[N.B.—*Candidates for the certificate of A. A. will answer only two questions from each section. Answers must be brief.*]

[*Candidates for Matriculation only will answer questions* 5, 6, 7, 8, 9.]

I.

1. Mention names of places in connection with the following, thereby suggesting incidents in Canadian History: Arnold, Braddock, Champlain Frontenac, Kirke, Montcalm, de Monts, de Salaberry, de Tracy, Walker. Give dates in five cases.

2. Name the three measures taken to remedy the evils existing in Canada in 1663.

3. What were the leading provisions of the Act of 1791?

II.

4. Name the principal battles of the war of 1812-14. Give the results of any one of them

5. Give an account of the Armada (not to be more than fifteen lines in length).

6. Write short notes on: Magna Charta, Constitutions of Clarendon Purveyance, Petition of Right.

III.

7. Give a short account of each of the following, with dates: John Wycliffe, Sir Walter Raleigh, Clive.

8. Name five Tudor sovereigns, with one important event in the reign of each.

9. Compare the characters of Charles I. and Oliver Cromwell

NEW TESTAMENT HISTORY.

THURSDAY, 6TH JUNE:—AFTERNOON, 3 TO 4.

Examiner, ... REV. R. HEWTON, M.A.

[*N.B.*—Answer one question out of each Section.]

I.

1. Give an account of the Birth of Christ.

2. Write a short history of the Crucifixion.

II.

1. Describe, under three heads, our Lord's Temptation.

2. Relate in detail St. Peter's denial of Christ.

III.

1. Tell what you know of St. Stephen.

2. Give a description of the events connected with the conversion of Saul of Tarsus.

IV.

1. Give the circumstances under which our Lord uttered the Parable of the *Sower;* name other Parables delivered at this time, and state the subject which those Parables were intended to illustrate.

2. What took place at Joppa, Lystra, Ephesus and Malta?

II. Optional Subjects.

(In the order of the Regulations.)

McGILL UNIVERSITY
(Montreal)

II. OPTIONAL SUBJECTS.

LATIN.

WEDNESDAY, JUNE 5TH:—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A. PH.D.

I.

LATIN GRAMMAR AND COMPOSITION.

NOTE.—In answering questions 1 to 5, candidates are requested to mark by the usual sign all *long vowels, and these only.*

1. Decline *ager, caut, miles, iter, tener, unus.* Decline together the Latin for "my house," "fifth day," "a bold enemy."

2. Give examples of the Locative case in the first, second, and third declensions

3. (*a*) Give the genitive, gender, and meaning of *aestas, crinis, custos, dives, facinus, utraque, passus.* (*b*) Give the principal parts and meaning of *impendeo, impero, impedio, indulgeo, iubeo, noceo, nubo, obliviscor, proicio, transduco.* (*c*) What case follows each of the verbs mentioned in (*b*)?

4. Write out the present and future imperative of *sum;* future indicative, active and passive, of *rego;* perfect indicative, active, of *audio;* present indicative, passive, of *capio,* and imperfect subjunctive of *prosum.*

5. Compare *acer, pulcher, similis, multus, feliciter.*

6. "Who is more eloquent (*eloquens*) than Cicero?" Translate this sentence, in order to illustrate the constructions with the comparative degree.

7. Translate: "He says that you are writing; that you will write; that you wrote." Give the rules for the *mood* and *tense* in the principal and subordinate clauses of indirect narration.

8. Illustrate the difference between the gerund and gerundive construction by translating "plans for destroying the city," or by a similar example.

9. Give the main uses of the Dative case, with examples where you can.

10. Translate into Latin :—

(1) The language, customs, and laws of all these differed from each other. (2) The Helvetii surpassed all the rest of the Gauls in prowess. (3) Their customs require him to plead his cause under arrest. (4) Nevertheless, he said: "I will take time to think it over; if you desire anything, you may return on the thirteenth of April." (5) At last disappointed in their hope, they abandoned their attempt.

II.

Caesar and Virgil.

1. Translate :—

(*a*) His Caesar ita respondit : Eo sibi minus dubitationis dari, quod eas res, quas legati Helvetii commemorassent, memoria teneret, atque eo gravius ferre, quo minus merito populi Romani accidissent : qui si alicuius iniuriae sibi conscius fuisset, non fuisse difficile cavere ; sed eo deceptum quod neque commissum a se intellegeret, quare timeret, neque sine causa timendum putaret. Quod si veteris contumeliae oblivisci vellet, num etiam recentium iniuriarum, quod eo invito iter per provinciam per vim temptassent, quod Aeduos, quod Ambarros, quod Allobrogas vexassent memoriam deponere, posse ?

(*b*) Genus hoc erat pugnae, *quo* se Germani exercuerant. *Equitum* milia erant sex, totidem *numero* pedites velocissimi ac fortissimi, quos ex omni copia singuli singulos suae salutis causa delegerant : cum his in proeli versabantur. Ad eos se equites recipiebant : hi, si quid erat durius, concurrebant, si qui graviore vulnere accepto *equo* deciderat, circumsistebant si quo erat longius *prodeundum* aut celerius recipiendum, tanta erat horum exercitatione celeritas, ut iubis equorum sublevati cursum *adaequarent*.

2. (*a*) Write out in direct narration 1 (*a*), from *Eo sibi minus.....posse*. (*b*) Explain the construction of *italicised* words.

3. Translate :—

Laeta suas, ubi templum illi, centumque Sabaeo
Thure calent aere, sertisque recentibus halant.
Corripuere viam interea, qua semita monstrat.
Iamque ascendebant collem, qui plurimus urbi
Imminet, adversasque aspectat desuper arces.
Miratur molem Aeneas, magalia quondam ;
Miratur portas, strepitumque et strata viarum.
Instant ardentes Tyrii : pars *ducere* muros,
Molirique arcem, et manibus subvolvere saxa ;
Pars optare locum tecto, et concludere sulco ;
Iura magistratusque legunt, sanctumque senatum ;
Hic portus alii effodiunt ; hic alta theatris
Fundamenta locant alii, immanesque columnas
Rupibus excidunt, scenis decora alta futuris :

Qualis apes aestate nova per florea rura
Exercet sub sole labor, cum gentis adultos
Educunt fetus, aut cum liquentia mella
Stipant, et dulci distendunt nectare cellas;
Aut onera accipiunt venientum, aut agmine facto
Ignavum fucos pecus a praesepibus arcent:
Fervet opus, redolentque thymo fragrantia mella.

4. Write out a scheme of the metre of the "Aeneid." Scan the first two lines.

5. (*a*) *Strata viarum: pars optare: scenis; thymo;* explain these constructions. (*b*) Derive *excidunt, templum, strata, inimicum, ambages.*

6. Write brief explanatory notes on: *milia passuum; Galliae potiri; a.d v. Kal. Apr.; ad Genavam pervenit; pontem faciendum curat; vectigal Longa Alba; tela Typhoia; Mavortia Moenia.*

GREEK.

Examiners, ... { VERY REV. DEAN NORMAN, D.D.
REV. G. H. A. MURRAY, B.A.

The answers to the questions in groups (A) *and* (B) *to be kept separate.*

A.

1. Translate Xenophon, Anabasis, Bk. I.

(*a*) Ἐθεώρει οὖν ὁ Κυρος πρῶτον μὲν τοὺς βαρβάρους, ὁι δὲ παρήλαυνον τεταγμένοι κατ' ἴλας καὶ κατὰ τάξεις εἶτα δὲ τοὺς Ἕλληνας, παρελαύνων ἐφ' ἅρματος καὶ η Κιλισσα ἐφ' ἁρμαμάξης. Εἶχον δὲ πάντες κράνη κᾶλκᾶ καὶ χιτῶνας φοινικίους καὶ κνημῖδας καὶ τὰς ἀσπίδας ἐκκεκαλυμμένας. Ἐπειδὴ δὲ πάντας παρήλασε, στήσας τὸ ἅρμα πρὸ τῆς φάλαγγος μέσης πέμψας Πίγρητα τὸν ἑρμηνέα παρὰ τοὺς στράτηγοὺς τῶν Ἑλλήνων ἐκέλευσε προβαλέσθαι τὰ ὅπλα καὶ ἐπιχωρῆσαι ὅλην τὴν φάλαγγα. Οἱ δὲ ταῦτα προεῖπον τοῖς στρατιώταις· καὶ ἐπεὶ ἐσάλπιγξε, προβαλλόμενοι τὰ ὅπλα ἐπῄεσαν. Ἐκ δὲ

τουτου θᾶσσον προϊόντων σὺν κραυγῇ ἀπὸ τοῦ αὐτομάτου δρόμος ἐγένετο τοῖς στρατιώταις ἐπὶ τὰς σκηνάς. Τῶν δὲ βαρβάρων φόβος πολὺς καὶ ἄλλοις, καὶ ἥ τε Κίλισσα ἔφυγεν ἐκ τῆς ἁρμαμάξης καὶ οἱ ἐκ τῆς ἀγορᾶς καταλιπόντες τὰ ὤνια ἔφυγον· οἱ δὲ Ἕλληνες σὺν γελωτι πὶὶ τὰς σκηνὰς ἦ λθον.

(*b*) Παρεκάλεσα ὑμᾶς, ἄνδρες φιλοι, ὅπως σὺν ὑμῖν βουλευόμενος ὅ τι δίκαιόν ἐστι καὶ πρὸς θεῶν καὶ πρὸς ἀνθρώπῶν, τοῦτο πράξω περὶ Ὀρόντου τουτουί. Τοῦτορν γὰρπρῶτον μὲν ὁὲ μὸς πατὴρ ἔδωκεν ὑπήκοον εἶναι ἐμοί· ἐπεδὲ ταχθείς, ὡς ἔφη αὐτός, ὑπὸ τοῦ ἐμοῦ ἀδελφοῦ οὗτος ἐπολέμησεν ἐμοὶ ἔχων τὴν ἐν Σάρδεσιν ἀκρόπολιν, καὶ ἐγω αὐτὸν προσπολεμῶν ἐποίησα, ὥστε δόξαι τούτῳ τοῦ πρὸς ἐμὲ πολέμου παύσασθαι, καὶ δεξιὰν ἔλαβον καὶ ἔδωκα. μετὰ ταῦτα, ἔφη. ὦ Ὀρόντα, ἔστιν ὅ τι σε ἠδίκησα; Ἀπεκρίνατο, ὅτι οὔ. Πάλιν δὲ ὁ Κῦρος ἠρώτα· Οὐκοῦν ὕστερον ὡς αὐτὸς σὺ ὁμολογεῖς, οὐδὲν ὑτ' ἐμοῦ ἀδικούμενος ἀποστὰς εἰς Μυσοὺς κακῶς ἐποίεις ν ἐμὴνἠτχώ ὅραν, τι ἐδύνω; Εφη ὁ Ὀρόντης.

2. Translate (1) ὁ δ' οὖν Τισσφέρνης ὡς μεῖον ἔχων ἀτηλλάγη. (2) Επεὶ ἐσάλπιγξε—what is understood? (3) Σπεισαμένου Κύρου ἐπίστευε μηδὲν ἂν παρὰ τὰς σπονδὰς παθεῖν. What is the construction of the words underlined? (4) βουλεύεται ὅπως μηποτε ἔτι ἔσται ἐπὶ τῷ αδελφῷ. Give the force of the preposition ἐπὶ. (5) ὡς πολεμεῖν τ ἱκανοὶ ἔιησαν και ευνοϊκῶς ἔχοιεν αὐτῳ. Why are ἔιησαν and ἔχοιεν in the optative mood? and note the force of ἔχω with an adverb.

3. Put into Greek (*a*) He sends for Cyrus from his domain. (*b*) He captures his brother with the purpose of killing him. (*c*) There the army remained thirty days.

(4) They said that they would not go. (5) Through the midst of these flows the river Euphrates.

4. (*a*) Decline throughout *ἱππεύς, ὠτίς, γόνυ, πούς.* (*b*) Write down the nominative and vocative singular and dative plural of *πόλεως, βασιλέα, παῖδε, μήτερα, ὁπλιτας* and *πυρούς.* (*c*) Compare *ἐχθρός, φίλος, εὐδαίμων, πλησίον*, and give other forms of *κακίους, πλέον, κρέα* and *πλείους.*

5. Write down the 1st person in each case of the 1st fut. indic., aorist and perfect of *ἔχω, πάσχω, θνήσκω, τάττω, σπένδω* and *αἰσθάνομαι.*

6. Derive *βοηθήσαντα, αὐτομολήσαντας, εὐώνυμον, εὐήθεια, ἀνατεταμένον.*

7. Mention the cases which follow *μετά, ὑπό, ὑπέρ, ἀνά κατά.* Give the Greek for 10, the twentieth, 40, 8 times, 10,000, 300, so many soldiers, such an army.

8. (1) *Εἰς Ζώνην δεδομέναι.* (2) *Ἀσπὶς μυρία.* Translate and give any corresponding English equivalents.

9. What tense in Greek is nearest the root of the verb? Mention any verbs that have some tenses transitive, and some intransitive. In such cases, which are the intransitive tenses?

10. Put into Greek: (*a*) The army of the king marched into the country of the enemy. (*b*) No longer accustom yourselves to deceive your friends. (*c*) They said that if any one were to do this, he would do the greatest injury to the state. (*d*) The cavalry of the Persians charge the ranks of the enemy at full speed. (*e*) I was here to see the army.

B.

HOMER, ILIAD, BK. IV.

1. Translate :—

Οὔστινας αὖ μεθιέντας ἴδοι στυγεροῦ πολέμοιο,
Τοὺς μάλα νεικείεσκε χολωτοῖσιν επέεσσιν·

Ἀργεῖοι ἰόμωροι, ἐλεγχέες, οὔ νυ σέβεσθε;
Τιφθ' οὕτως ἔστητε τεθηπότες, ἠΰτε νεβροί;
Αἴτ' ἐπεὶ οὖν ἔκαμον πολέος πεδίοιο θέουσαι,
Ἑστᾶσ', οὐδ' ἄρα τίς σφι μετὰ φρεσὶ γίγνεται ἀλκή
Ὥς ὑμεῖς ἔστητε τεθηπότες, οὐδὲ μαχεσθε.
Ἦ μένετε Τρῶας σχεδὸν ἐλθέμεν, ἔνθα τε νῆες
Εἰρύαται εὔπρυμνοι πολιῆς ἐπὶ θινὶ θαλάσσης,
Ὄφρα ἴδητ', αἴ κ' ὑμιν ὑπέρσχῃ χεῖρα Κρονίων;

2. Parse the underlined words in the above extract, giving principal parts of the verbs, and adding such brief comments as you may deem necessary.

3. Translate :—

Οἱ δ' ὅτε δή ῥ' ἐς χῶρον ἔνα ξυνιοντες ἵκοντο,
Σύν ῥ' ἔβαλον ρινούς, συν δ' ἔγχεα καὶ μένε' ἀνδρῶν
Χαλκεοθωρήκων· ἀτὰρ ἀσπίδες ὁμφαλόεσσαι
Ἔπληντ' αλλήλῃσι, πολυς δ' ορυμαγδὸς ὀρώρει.
Ἔνθα δ' ἄμ' οἰμωγή τε καὶ εὐχωλὴ πέλεν ἀνδρῶν,
Ὀλλύντων τε καὶ ολλυμένων· ῥέε δ' αἵματι γαῖα.
Ὡς δ' ὅτε χειμαῤῥοι ποταμοὶ κατ' ὄρεσφι ῥέοντες
Ἐς μισγάγκειαν συμβάλλετον ὄβριμον ὕδαρ
κρουνῶν ἐκ μεγάλων, κοίλης ἔντοσθε χαράδρης·
Τῶν δέ τε τηλόσε δοῦπον ἐν οὔρεσιν ἔκλυε ποιμήν·
Ὡς τῶν μισγομένων γενετο ἰαχή τε φόβος τε.

4. Comment briefly on each word or phrase underlined in the foregoing passage, noting any grammatical peculiarities.

5. Explain :—

(*a*) The different uses of the article ὁ, ἡ, τό, in Homer ;

(*b*) The Homeric Suffix φι or φιν ;

(*c*) The Local Endings θι, θεν, and δε.

6. (*a*) Name the Principal Ancient Greek Dialects ;

(*b*) Point out any traces you may have noticed in reading this book of an older Dialect ;

(*c*) In what way is the Scansion affected by them ?

FRENCH.

MONDAY, JUNE 3RD :—AFTERNOON, 3.30 TO 5.30.

Examiners,..... { PROF. P. J. DAREY, LL.D., Officier d'Acad.
REV. J. L. MORIN, M.A.

Candidates will kindly write on different papers questions marked A or B.

A.

1. Translate and explain the different forms of the article : Of the king. From the book. To the door. To the tree. To the finger of the boy. The queen's friend. The man's dog. To the sisters of the boys. To the pen and ink. The child's brothers and sister.

2. Write in the plural : (1) bétail, (2) canal, (3) clou, (4) paix, (5) anneau, (6) vitrail, (7) ce, (8) celui, (9) bleu, (10) lieu. State the rules for each case.

3. How are the three degrees of comparison expressed in French ? Give examples of each.

4. Give the relative pronouns, and construe sentences to exemplify the use of each.

5. Write in full the (1) *present indicative*, (2) *preterite definite*, (3) *future*, (4) *present subjunctive of:* (*a*) *mourir*, (*b*) *envoyer*, (*c*) *coudre*, (*d*) *songer*, (*e*) *mouvoir*, (*f*) *voir*, (*g*) *dire*.

6. Translate the following sentences and explain the use of the (1) *mood* and (2) *tense* of each verb in italics:

Napoléon *était* un grand général, mais il *fut* peu prévoyant dans bien des cas.

Je crains qu'il ne *vienne*.

Il ne pouvait nier qu'il n'eût fait cela.

Pierre est le meilleur ami que *j'aie*.

Il était impossible que mon frère *fît* ce travail en si peu de temps.

Je *lisais* quand vous *entrâtes*.

7. Translate:—

(*a*) The man to whom you spoke yesterday is my cousin's friend. The lady whom you see is my sister's teacher. What day of the month is it? It is the third of June, one thousand eight hundred and ninety-five. What o'clock is it? It is only twelve o'clock. A room fifteen feet long by eighteen feet broad and eight feet high. Do you know how much your father earns a day? He earns as much as yours, he earns five dollars a day.

(*b*) Pouvez-vous vous passer d'encre? Nous pouvons nous en passer nous n'avons rien à écrire. Les plumes dont vous vous servez sont-elles bonnes? Dès que je l'aperçus je lui parlai. Vous en allez-vous bientôt? Je m'en vais la semaine prochaine. Je vais à l'école tous les jours. Il faut que vous fassiez votre devoir. Que veut dire ce mot? Je n'en sais rien, regardez dans le dictionnaire.

B.

Re-translate into French:—

The Constable of Bourbon and Bayard.

"It is never permitted to take arms against one's own country."

The Constable. Is it not the poor Bayard whom I see at the foot of that tree, stretched upon the grass and pierced with a great blow? Yes, it is himself. Alas! I pity him. There are two who perish to-day by our arms, Vendenesse and he. Those two Frenchmen were two ornaments of their nation by their courage. I feel that my heart is yet touched for its country. But let us advance to speak to him. Ah! my poor Bayard! it is with pain that I see thee in that state.

Bayard. It is with pain that I see you also.

The Constable. I understand well that thou art sorry to see thyself in my hands by the fate of war: but I do not wish to treat thee as a prisoner; I wish to treat thee as a good friend, and take care of thy recovery, as it thou wert my own brother. So thou shouldst not be sorry to see me.

Translate into English:—

Bayard. Eh! croyez-vous que je ne sois point fâché d'avoir obligation au plus grand ennemi de la France! Ce n'est point de ma captivité, ni de ma blessure que je suis en peine. Je meurs dans un moment: la mort va me délivrer de vos mains.

Le Connétable. Non, mon cher Bayard; j'espère que nos soins réussiront pour te guérir.

Bayard. Ce n'est point là ce que je cherche; je suis content de mourir.

Le Connétable. Qu'as-tu donc? Est-ce que tu ne saurais te consoler d'avoir été vaincu et fait prisonnier dans la retraite de Bonnivet? Ce n'est pas ta faute, c'est la sienne. Les armes sont journalières. Ta gloire est assez bien établie par tant de belles actions. Les Impériaux ne pourront jamais oublier cette vigoureuse défense de Mezières contre eux.

GERMAN.

TUESDAY, JUNE 4TH:—MORNING, 9 TO 10.30 A.M.

Examiners..... { A. JUDSON EATON, M.A., Ph.D
L. R. GREGOR, B.A.

1. Translate:

Also ritten sie mit einander in Paris hinein, und zwar das Bäuerlein auf der rechten Seite des Königs; denn was die liebe Einfalt, es sei mit Absich oder durch Zufall, Ungeschicktes thun kann, d thut sie. Der Bauer gab dem König auf alle seine Fragen gesprächige Antwort. Er erzählte ihm. Manches über den Feldbau, aus seiner Haushaltung und wie er zuweilen des Sonntags auch sein Huhn in dem Topfe habe, und merkte lange nichts. Als er aber sah, wie alle Fenster sich öffneten und alle Straßen sich mit Menschen anfüllten, wie Jedermann ehrerbietig auswich, da ging ihm ein Licht auf. „Mein Herr," sagte er zu seinem unbekannten Begleiter, den er mit Aengstlichkeit und Verwunderung anschaute, „entweder seid ihr der König oder ich bin's; denn wir Beide haben allein noch den Hut auf dem Kopf

Da erhob sich der Engel des Schlummers von seinem bemoos'ten Lager, und streuete mit leiser Hand die unsichtbaren Schlummerkörnlein. Die Abendwinde trugen sie zu den stillen Wohnungen des müden Landmannes Nun umfing der süße Schlaf die Bewohner der ländlichen Hütten, von dem Greise, der am Stabe geht, bis zu dem Säugling in der Wiege. Der Kranke vergaß seine Schmerzen, der Trauernde seinen Kummer, der Arme seine Sorgen. Alle Augen schlossen sich.

2. Translate into German :

(*a*) I would take a walk with you, if I had time.

(*b*) The father shook his son's hand and said farewell to him.

(*c*) The countesses were very happy, when they heard the news of their father.

(*d*) My sister is learning the song which was sung at the concert yesterday.

(*e*) Iron is heavy, lead is heavier, but gold is heaviest of all.

(*f*) The patient is better to-day ; he will be allowed to go out to-morrow.

(*g*) During the rain we sat under a tree and told stories.

3. Translate :

A beggar said to a rich man : " Brother, give me something." The rich man asked : " Since when have we been brothers ? " " Are we not all sons of Adam ? " said the beggar. " You are right," said the other, " I did not think of that," and then he gave the beggar a penny. " But a penny is a very small present for a brother," said the beggar. " What !" cried the rich man, greatly astonished, " friend, if all (the) sons of Adam give you as much as I (have), you would soon be the richest man on earth."

4. *Wir lieben uns.* Explain the ambiguity of meaning. How could it be removed ?

5. Decline in the singular : *my noble father, the largest house.*

6. Give the second person sing., pres. ind., and the first person sing. imperf. ind., of the following verbs : burn, break, command, go, steal, speak, measure, read.

7. Give two general rules stating when the definite article is required in German contrary to English usage.

8. Translate : *These are the books.* Make general statement on this use of the pronoun.

9. How do you form the subjunctive of the imperfect of strong verbs ?

GEOMETRY.

TUESDAY, JUNE 4TH:—AFTERNOON, 2 TO 4.

Examiners..... { REV. PRINCIPAL ADAMS, D.C.L.
G. H. CHANDLER, M.A.
H. M. TORY, B.A.

Answer the first six questions and any other *two*.

1. (*a*) Any two sides of a triangle are together greater than the third side.

(*b*) Also prove independently that the third side is greater than the difference of the other two.

2. (*a*) Define a parallelogram.

(*b*) Prove that the opposite sides and angles of a parallelogram are equal, and that the diagonals bisect each other.

(*c*) Prove that the diagonals of an equiangular quadrilateral are equal, and that the diagonals of an equilateral quadrilateral are perpendicular to one another.

3. (*a*) Find the sum of the interior and also of the exterior angles of any rectilineal figure.

(*b*) Show that the interior angle of a regular hexagon equals the exterior angle of an equilateral triangle.

4. (*a*) If the straight line AB is divided in C, prove that sum of squares on AB, BC equals twice rectangle AB, BC together with square on AC.

(*b*) Hence show how to find the square of the difference of any two straight lines.

5. (*a*) Define a circle. (*b*) Give the postulate relating to the circle. (*c*) Find the centre of a given circle. (*d*) When a point is not the centre of a circle, show that not more than two equal lines can be drawn from that point to the circle.

6. (*a*) From a given external point to draw a straight line to touch a given circle.

(*b*) Show that two such straight lines can be drawn, and that they are equal in length.

7. If in a triangle ABC the square on AB equals squares on AC, CB, added together, prove that ACB is a right angle.

8. To make a square equal to a given rectilineal figure.

9. The angle at the centre is double the angle at the circumference standing on the same arc.

10. Define segment of a circle, vector of a circle. Prove that the angle between the chord and the tangent equals the angle in the alternate segment.

ALGEBRA.

MONDAY, JUNE 3RD :—AFTERNOON, 2 TO 3.30.

Examiners, ... { G. H. CHANDLER, M.A. / REV. PRINCIPAL ADAMS, D.C.L. / H. M. TORY, B.A.

1. Reduce to their lowest terms the fractions

$$(1)\quad \frac{a^2 - ab - 2b^2}{a^2 - 3ab + 2b^2}, \quad (2)\quad \frac{x + x^2y}{x - y^2}.$$

2. Reduce $\left(\frac{a-x}{a+x} - \frac{3x^2 - 4ax + a^2}{a^2 - x^2}\right) \cdot \left(\frac{a^2 + 2ax + x^2}{2x}\right)$ to its simplest form.

3. Find the square root of

$$4 - 12a + 5a^2 + 14a^3 - 11a^4 - 4a^5 + 4a^6.$$

4. Simplify $8\sqrt{28} - 4\sqrt{63}$, and rationalize the denominator of $\frac{\sqrt{7} + \sqrt{2}}{9 + 2\sqrt{14}}$.

5. Solve the equations

$$(1)\quad \frac{5x}{x+4} - \frac{3x-2}{2x-3} = 2,$$

$$(2)\quad \left.\begin{matrix} x^2y = 48 \\ xy^2 = 36 \end{matrix}\right\},$$

$$(3)\quad \sqrt{x} - 7 = \frac{1}{\sqrt{x} + 7}.$$

6. If a train travelled 20 miles an hour faster, it would take 4 hours less to travel 300 miles; how long does it take?

TRIGONOMETRY

TUESDAY, JUNE 4TH :—AFTERNOON, 4 TO 5.30.

Examiners, ... { REV. PRINCIPAL ADAMS, D.C.L. / G. H. CHANDLER, M.A. / H. M. TORY, B.A.

1. Define the unit of the circular system of measurement of angles, and prove that it is equal to 57.2958 degrees

2. Trace the changes of sign in the tangent of an angle as the angle increases from 0° to 360°.

3. Prove the following relations :

(1) $\sin^2 A + \cos^2 A = 1$

(2) $\sec^2 A = 1 + \tan^2 A$

(3) $\tan^2\theta - \sin^2\theta = \sin^4\theta \sec^2\theta$

(4) $\sec^4\theta + \tan^4\theta = 1 + 2\sec^2\theta \tan^2\theta$

4. Prove that $\sin(A - \beta) = \sin A \cos\beta - \cos A \sin B$, and also that $\cos(A - \beta) = \cos A \cos\beta + \sin A \sin B$.

5. Shew that

(1) $\tan(A + \beta) = \dfrac{\tan A + \tan B}{1 - \tan A \tan B}$

(2) $\cot(A + \beta) = \dfrac{\cot A \cot\beta - 1}{\cot\beta + \cot A}$

(3) $\cos P + \cos Q = 2\cos\dfrac{P+Q}{2}\cos\dfrac{P-Q}{2}$

6. Prove the following :

(1) $\sin 2A = 2\sin A \cos A$

(2) $\cos 2A = 1 - 2\sin^2 A$

(3) $\sin A = \dfrac{2\tan\dfrac{A}{2}}{1 + \tan^2\dfrac{A}{2}}$

(4) $\dfrac{1 - \cos A}{1 + \cos A} = \tan^2\dfrac{A}{2}$.

ENGLISH LANGUAGE.

MEIKLEJOHN: *The English Language*, Pts. I., II., III. TRENCH: *On the Study of Words.*

MONDAY, JUNE 10TH:—AFTERNOON, 3.30 TO 5.30.

Examiner,..... CHAS. E. MOYSE, B.A.

[N.B.—The *Analysis must be attempted by all.* From Divisions II., III. and IV., *eight* questions altogether are to be answered, namely, *one* from Division II., *one* from Division III., *two* from Division IV., and *any four* others. *Number your answers carefully* and confine yourself strictly to the requirement of the questions.]

Analysis.

I.

[You will use such portions of the following nomenclature as you may require: 1. Kind of sentence or clause. 2. Subject. 3. Attributive Adjuncts or "Enlargement" of subject. 4. Predicate. 5. Completion of Predicate. 6. Object (direct and indirect). 7. Attribute Adjuncts or "Enlargement" of object. 8. Extension.]

Analyse: Now methinks you teach me how a beggar should be answered.

II.

1. (*a*) Define *vowel*, *diphthong* (two examples), *spirant*.

(*b*) Place the following letters in their subdivisions under the heads *mutes* and *sirants*: g, s, t, z.

(*c*) Derive *alphabet:* state the two conditions of a perfect alphabet, and

(*d*) Show that the English alphabet violates those conditions. (Give only one proof in each case.)

2. (*a*) Name the classes of common nouns, and give two examples of each class.

(*b*) Write four suffixes of different foreign origin which mark gender, and say from what language each is *directly* derived.

(*c*) Give four plurals of different foreign origin used in English, and say from what language each is derived.

(*d*) Account for the change required to form the plural of *box*, *child*, *mouse*.

(*e*) After the following words write the special prepositions they take: confer, correspond, disappointed.

3. (*a*) Mention the four classes of pronouns, and give an example of each class. What form would you find in the oldest English for each of the following: *she*, *him* (acc.), *it* (dat.), *you* (nom. pl.)

(*b*) Place the following adjectives in their classes and, when necessary, sub-classes: each, her, twelfth, rapid, several, these.

(*c*) Give the second person singular of

(1) the Present Perfect Subjunctive of *be*;

(2) the Present Perfect Subjunctive Passive of *hit*.

(3) the Future Perfect Continuous Indicative Active of *hit*.

(*d*) Compare the adverbs nigh, much, far, forth.

III.

1. (*a*) Give the etymology of the following words: petrel, phaeton, artesian, solecism.

(*b*) Show that the following words are disguised in form: butcher, crayfish, dirge.

(*c*) Give the etymology and show the change of meaning of: explode, racy, insolent.

2. (*a*) Name four figures of speech (excluding *allegory*), and give one example of each:

(*b*) Define the following: Ballad metre, Alexandrine, quatrain, elegiac verse, Spenserian stanza. Write a short paragraph on the sonnet.

3. (*a*) Contrast in *general terms*, but with precision, Anglo-Saxon and modern English, (1) nouns, (2) adjectives, (3) pronouns, (4) verbs, (5) poetry.

(*b*) Mention, with dates, the periods into which the English language is divided. What caution should be given concerning them?

(*c*) Make notes on Pen, beck, Doncaster, candle, vassal.

4. (*a*) Many Latin words have entered our language through Norman-French: in what form do *benedictio*, *exemplum*, *major*, *oratio*, *species* appear?

(*b*) Tell "the story of the *gh*."

(*c*) Give three modern English forms of earlier gutturals, and one example of each.

IV.

[*Trench.*]

1. (*a*) What *general* statemen's do Morimo and Vigilantius support?

(*b*) Write and explain two names of places which designate the leading features of outward nature. Mention and explain one instance of imagination in the nomenclature of prosody.

(*c*) Write the words relating to the windows of a Gothic cathedral and Gothic tracery which Trench mentions. What *general* statement do they prove?

(*d*) Of what general fact are *tawdry* and *animosity* cited as proofs? Use them as such.

2. (*a*) State carefully what *cypher*, *nadir* and *alembic* show.

(*b*) Briefly prove that the Indo-European race before the time of emigration, (1) had passed beyond the fishing and hunting stage, (2) had not turned to agriculture, (3) did not work metals.

(*c*) State briefly, and without any detail, why Europeans are called Franks in the East

(*d*) Write a noun derived from e[illegible]h of the following: Magnesia, Baldacco, Carron, Ypres.

3. (*a*) Write a noun derived from each of the following: Majorca, Donatus, Hippocrates, Nicot.

(*b*) Trench makes two appeals to the New Testament to prove that the scruples of the Quakers are needless. Cite them.

(*c*) To what single fact do the names Galileans and Nazarenes point?

(*d*) Make notes on cosmopolite, affiance, soliloquy, merkain.

4. (*a*) "Etymologies at random:" *pavo*, *apis*, *girl*.

(*b*) What single gain does Trench see in phonetic spelling?

(*c*) Briefly state the two main objections to phonetic spelling, and give two of the proofs cited in connection with one of them.

(*d*) Make notes on the following matters: the territorial divisions of the county of Sussex; the "stock" group of words.

ENGLISH LITERATURE.

FRIDAY, JUNE 7TH :—MORNING, 9 to 10.30.

Examiner,..... REV. PRINCIPAL ADAMS, D.C.L.

[N.B.—Two questions *only* to be done from each of the three parts.]

I.

1. Precisely describe Chaucer's style, and give the dates of his life.

Give a note on John Barbour and the dates of his life.

Give a note on James I (of Scotland), and on William Caxton; also on the Faerie Queene; its author, its subjects, and its stanza.

2. Discuss the eighteenth century as "an age of prose."

Name three great prose writers of each half of the century and give a concise account of the life and work of *one* of each trio.

3. Say who wrote the following, and what each is:

(*a*) Sardanapalus, Ode to West Wind, Endymion, Hester, Count Julian, Emma, Sartor Resartus, Lays of Ancient Rome.

(*b*) Mention *one* of the best known works of the following: Robert Burns, Robert Southey, Sir John Mandeville, Richard Hooker, John Bunyan, S. T. Coleridge, W. Wordsworth, James Thomson, John Milton; name the century in which each of the nine lived most.

II.

JULIUS CÆSAR.

4. (*a*) What are Triumvirs, Senators, Tribunes, Sophist, Soothsayer?

(*b*) Name any persons in the play of Julius Cæsar who come under one or other of the above five descriptions.

(*c*) What wives are mentioned in the play?

(*d*) What are the chief scenes and in what places?

5. Write a brief note on each of the following words or expressions used in the play, explaining any allusion and the meaning:

(*a*) "a mender of bad soles."

(*b*) "What tributaries follow him to Rome?"

(*c*) "in her concave shores."

(*d*) "See *whe'r* their basest metal be not mov'd."

(*e*) "Lupercal."

(*f*) "Æneas.

(*g*) "feeble temper."

(*h*) "he hears no music." (Also give a parallel passage here.)

(*j*) "he spoke Greek."
(*k*) "Capitol."
(*l*) "Why old men," fools and children calculate"
(*m*) "In favour's like the work we have in hand."
(Also give a various reading here.)
(*n*) "Erebus."
(*o*) "cautelous."
(*p*) "and envy afterwards."
(*q*) "all the charactery of my sad brows."
(*r*) "Calphurina's dream."

6. Explain (*a*) "Pompey's basis."

(*b*) "Shaking the bloody fingers of thy foes,"—who did this and with whom?

(*c*) "Até": (*d*) give quibbles on "Rome" and "room"; also explain allusion: (*e*) "Nervii," (*f*) "their names are pricked," (*g*) "bay not me." (*h*) Quote ten consecutive lines from *either* of the funeral speeches of Antony *or* Brutus, saying which it is.

III.

Lady of the Lake.

7. Name the six cantos. Say how the following names are brought into the poem; explain the reference and make a short note on each: Saint Fillan, Caledon, Monan, Uam-Var, Menteith, Vennachar, Turk, Naiad, Snowdoun, Douglas, Benvenue.

8. What songs are introduced into the poem? Mention their subjects, and also the stage of the story at which each is introduced. Name the person supposed to sing each, and who are present on each occasion. Give a two-line quotation from each. Give a short sketch of the character of Roderick Dhu.

9. Write a *brief* note on each of the following passages:

(*a*) "The fatal Ben-Shie's boding scream." (Give the Irish equivalent of "Ben-Shie.")

(*b*) "Whose parents in Inch-Cailliach wave"

(*c*) "Has Coir nan-Uriskin been sung"

What is the Grecian equivalent of Urisk?

(*d*) "The Gael, of plaid and river heir."

(*e*) "For thou wert christened man."

(*f*) "The Taghairm called; by which, afar."

(*g*) Who or what were Urgan, Dunfermline, Bochastle, Allan, Tweed, Spey, a stag of ten, Mar, Holy-Rood, Saxon?

(*h*) Describe Fitz-James' gallop.

HISTORY.

THURSDAY, JUNE 6TH:—AFTERNOON, 2 TO 3.30.

Examiner, ... JOHN COX, M.A.

(N.B.—Candidates may answer *two* questions, and not more, from each of Divisions I. and II.; and *three* from Division III.)

I.

1. Write short notes on:—the Olympic Games, the Areopagus, Ostrakism, Phalanx, Philippic.

2. Give a brief account (with dates) of:—Solon, Themistocles, the Four Hundred, the Confederacy of Delos, the Sicilian Expedition.

3. Describe: (*a*) the cities of Athens and Sparta at the time of Pericles, (*b*) the siege of Platæa, (*c*) the causes which broke up Greece into small States, and (*d*) those which kept them united.

II.

1. Write briefly on:—Decemviri, Dictator, the Gracchi, Catiline, Regulus.

2. Write short lives (with dates) of: Pyrrhus, Scipio Africanus, Sulla, Augustus, Jugurtha.

3. Give the dates, combatants and consequences of the following battles:—Cannæ, Actium, Sentinum, Pharsalia, Chalons.

III.

1. Sketch in outline: (1) the career of Mahomet, (2) the life and policy of Richelieu, (3) the rise of Prussia and formation of the German Empire.

2. Write a few words about each of (1) the Edict of Nantes, (2) the Cid, (3) Genseric, (4) Anabaptists, (5) Haroun-al-Raschid.

3. Briefly describe, with date and reason for importance, the battles of Austerlitz, Lutzen, Sempach, Pavia, Pydna.

4. Write carefully upon *one* of the following:—(1) Columbus, (2) the rise and greatness of Venice, (3) the Conquest of Mexico.

GEOGRAPHY.

FRIDAY, JUNE 7TH :—MORNING, 10.30 TO 12.

Examiner,..... CHAS. E. MOYSE, B.A.

[N.B.—*Six* questions are to be answered; namely, any *two* from each division.]

I.

1. (*a*) A good map of the hemispheres is marked with various lines. How do they run, and what are they called, and why?

(*b*) Explain, as simply as you can, why, in certain regions of the earth, the year consists of one night and one day. Illustrate clearly by means of a diagram.

2. (*a*) State the chief cause of the tides. Explain (or illustrate by means of a diagram) the phenomena of *spring* and *neap* tides. (You must show that you know the meaning of any technical terms you use.) Why do high tides occur simultaneously at opposite points of the earth's surface?

(*b*) Select any three oceans, and give a very brief but precise proof that well defined circulation of water takes place in each.

3. (*a*) Write what you know concerning the trade winds and monsoons. Where do typhoons and simooms occur, and what is their nature? In warm maritime regions wind often blows steadily from the sea to the land during the day and from the land to the sea during the evening. Explain the cause of this.

(*b*) Explain the origin of icebergs. State briefly, but with precision, why an iceberg is often enveloped in fog.

II.

1. (*a*) State in general terms four points of difference between the physical features of South America and Europe. Give one geographical detail in proof of each point.

(*b*) Name four independent States of South America, two being inland and two maritime. State precisely how each State is bounded; give its capital, its form of government and one of its chief exports.

(*c*) Treat Europe (excluding France) as you have just treated South America.

2. (*a*) Name a large river in Europe, North America and Asia which in some portion of its course forms a national boundary. Name the countries it separates, and state on which bank (right or left) each is situated.

(*b*) Trace the European river from its source to its mouth, naming, *as you pass them*, the chief tributaries on either bank. Name also, *and in order*, the chief places on the river and the country in which they are situated.

3. (*a*) What is each of the following and in what country is it situated? —*Benares*, Lena, *Matàpan*, *Blanc*, Messina, Patras, Helvellyn, *Nijni Novgorod*, Finisterre, Auckland, Arno, Bala, Greenock, Adrianople, *Wrath*, Cordova, *Garda*, Malar, *Antwerp*.

(*b*) Make a short note on each of the names in italics.

III.

1. (*a*) Name the provinces of the Dominion of Canada. State how each is bounded and in what quarter. Name two important places in each, one being the capital. Mention an important natural product of each province.

2. (*a*) *Great Britain*: Name a manufacture for which each of the following places is famous: Paisley, Sheffield, Nottingham, Coventry. In what county is each situated? Place the following in the order in which you would pass them when coasting Great Britain: Dover, Cardiff, Plymouth, Hull, Southampton, Birkenhead, Ayr, Leith, Greenock, Berwick.

(*b*) Write a short paragraph on the minerals of Great Britain, and as you do so state some locality in which each is found.

3. Write in *connected prose* a geographical account of France *or* the United States, and let it consist of the following subjects in the following order: *area*, *mountain systems*, *river systems*, *natural products*, *exports*.

(Limit your account to twenty-five lines, and endeavor to show as full and accurate a knowledge of locality as possible.)

4. (*a*) Describe briefly but accurately the situation of Japan, and name its capital.

(*b*) Draw a map of the region in which China and Japan have been fighting, and mark on it the situation of places which recent operations have made conspicuous. Briefly trace Japan's campaign.

ZOOLOGY.

TUESDAY, JUNE 11TH:—TIME, 1½ HOURS.

Examiner, ... W. E. DEEKS, B.A., M.D.

1. Write on the structure and classification of sponges.

2. Compare structurally the *Hydrozoa* and the *Polyzoa*. Give an example of each group.

3. Classify the *Echinodermata*, and give the characters of each class.

4. Describe the structure of the *Gastropoda*. Compare the homologous parts in the *Cephalopoda*.

5. Describe the structure of any well-known Canadian Bivalve Mollusk, *or* Insect.

6. Compare the circulatory systems in the different classes of *Vertebrata*.

7. Refer to their proper classes and orders:—Perch, spider, eagle, sea-pen, amœba, turtle, cuttle-fish, sea-anemones, horse, lobster.

8. Characterize briefly, and give examples of:—*Infusoria*, *Cirrhipedia*, *Brachiopoda*, *Selachii*, *Amphibia*.

N.B.—Candidates are required to answer the last two and any four of the remaining six.

BOTANY.

FRIDAY, JUNE 7TH:—Afternoon 2 to 3.30.

Examiner,.....D. P. PENHALLOW, B.Sc.

Group I.

1. State what you can respecting the sources and nature of plant food.

2. Give an account of respiration in plants.

3. What is meant by transpiration? Show under what conditions it occurs.

4. Give a concise account of the composition of a living plant cell.

Group II.

5. Carefully explain the nature of such organs as are represented in the common potato and the onion.

6. Give a careful explanation of the composition of a seed of corn, and show what group of plants it represents.

7. Enumerate the principal organs of a seed plant, and indicate the functions of each.

8. What is a Dicotyledonous plant? Outline its principal characteristics.

Group III.

9. Give an outline of the leading features in the structure and reproduction of a club-moss.

10. Give an account of the structure and reproduction of a mushroom.

11. Outline the structure and reproduction of a dog-tooth violet.

12. Describe fully the plant given. *This question is imperative.*

The Candidate will answer six questions including number twelve, selecting two from each group.

Examiners will please supply any common WILD flower, and take particular pains that ALL PARTS OF THE PLANT are present.

ELEMENTARY CHEMISTRY.

THURSDAY, JUNE 6TH:—MORNING, 9 TO 9.30.

Examiner,..... ALEX. BRODIE, B.A.Sc.

NOTE.—*Answer two questions only from each section.*

I.

1. Define accurately five of the following terms:—Element, molecule, allotropic, valence, salt, combustion.

2. Give the scientific and common names of five compounds represented by the following formulæ:—$(NH_4)Cl$, KNO_3, Na_2CO_3, HCN, $CaCO_3$, $Na_2B_4O_7$.

3. Explain briefly the laws of definite and multiple proportion.

II.

1. Describe briefly the manufacture of Sulphuric Acid. Give a sketch of the apparatus employed.

2. How is Chlorine prepared, and what are its properties? How does it occur in nature?

3. Tell all you know about the preparation and properties of Oxygen *or* Hydrogen.

III.

1. Name two important compounds of Carbon. Give the properties of one, telling how it is usually prepared.

2. Give an account of the manufacture of Sodium Carbonate by the Leblanc process, showing by means of equations what chemical changes take place.

3. Name an important compound of Nitrogen, giving its properties and preparation. What other elements belong to the Nitrogen family?

PHYSIOLOGY AND HYGIENE.

FRIDAY AFTERNOON, 7TH JUNE:—3.30 to 5.

Examiner,..... W. E. DEEKS, B.A., M.D.

1. State fully the difference between striped and unstriped muscular issue, both anatomically and physiologically. Give examples.

2. Name the bones of the head. State how they are united together and how growth takes place in them.

3. A boy cuts his finger and it bleeds freely :—
From what vessels might the blood come?

How could you tell?

How would you proceed to stop it?

4. Describe the organ of hearing, and state how sound waves are conveyed to the brain?

5. Name the anatomical structures concerned in digestion. State the unction performed by each in a meal consisting of roast-beef, potatoes, lettuce, and coffee.

6. Write on the hygiene of the skin.

7. Make notes on :—plasma, fascia, spinal cord, periosteum, pupil, sclerotic, molar, retina, mitral, medulla.

8. State the probable causes and suggest the remedies, when a student begins to yawn, and becomes sleepy, while studying in a poorly ventilated room with artificial light.

N.B.—Candidates are required to answer the last four, and any two of the first four.

PHYSICS.

FRIDAY, JUNE 7TH :—MORNING, 9 TO 10.30.

Examiner,..... ..... JOHN COX, M.A.

1. Distinguish between the three states of matter. How do you account for them?

2. Give an instance of each of the following:—Hardness, Tenacity, Viscosity, Absorption, Diffusion.

3. Describe an Air Pump and its action. If the barometer stands at 760*mm*, what fraction of the air in the Pump must be removed to make the gauge stand at 10*mm*?

4. Explain the formation of springs and artesian wells.

5. Find: (1) the pressure in lbs. per square inch at a depth of 1,000 feet in water,

(2) The specific gravity of a piece of mineral which weighs 32.03*g* in air and 26.47*g* in water.

6. A stone weighing 1 kilogramme is allowed to fall for 3 seconds. Find : (1) its velocity, (2) the distance it has fallen, (3) its momentum.

7. A horse drags a waggon weighing 2,250 lbs. up a road for 150 yards, during which the road rises 10 feet. Shew, from the principle of Work, or otherwise, what force he has exerted beyond that which would drag the waggon on a level road.

8. Give one common instance of each of the following :—generation of heat by (1) friction, (2) blows ; transfer of heat by (1) conduction, (2) convection, (3) radiation ; and explain the meaning of the last three terms.

9. Describe carefully the making of a mercury thermometer.

GEOMETRICAL AND FREEHAND DRAWING.

MONDAY, JUNE 10TH :—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. (*a*) Divide a line three inches long in extreme and mean ratio (*i.e.*) in medial section.

(*b*) Find a third proportional to 3 inches and $2\frac{1}{2}$ inches.

2. Describe a regular (*a*) Hexagon, (*b*) Octagon, having one inch sides.

3. Draw an ellipse by an accurate method, having a major axis three inches long and a minor axis two inches long.

4. Draw a parabola having an axis three inches long, and a double ordinate four inches long.

5. Sketch an example of Celtic ornament.

6. Make a freehand drawing slightly enlarged of the ornament (wrought iron panel) before you.

7. Make a freehand drawing of the objects before you as they appear from your point of view :

(*a*) A skeleton cube.

(*b*) A double cone.

N.B.—Candidates are informed that the Geometrical (the first four questions) cannot be answered without instruments (compasses and straight edge), and that no marks will be given for the freehand problems 5, 6 and 7, if instruments are used in drawing them.

The objects for question 7 are to be placed on separate tables, and are to be four feet from the Candidate. The skeleton cube is to be placed so that the nearer edges towards the right hand of the candidate make angles of 30° approximately with the line joining the eye to the object. The cone is to stand on one base.

BIBLIOTECA UNIVERSITARIA
(Mezzanino)

McGILL UNIVERSITY LIBRARY

MCGILL UNIVERSITY LIBRARY

McGill University Libraries
McGill University Library
3 103 858 509 0